SAMPO

MMM-0002
VER. 1.0

34“ MULTIMEDIA MONITOR
SERVICE MANUAL
MODEL SME-23DL3 SERIES

REV: 1

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If having any changes, do not do advanced advice.

IMPORTANT SAFETY PRECAUTIONS

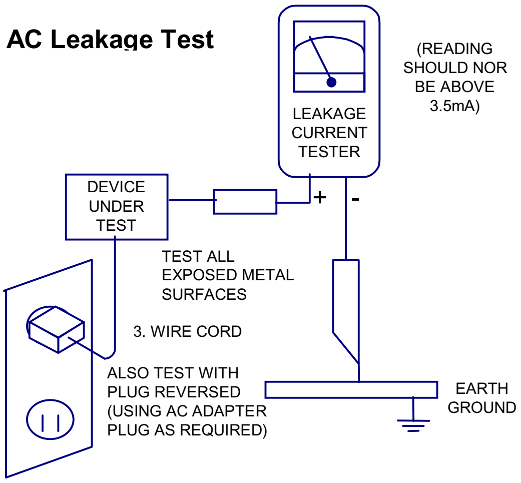
VER 1.0

1. **Before returning an instrument to the customer,** always make a safety check of the entire instrument, including, but not limited to, the following items.

a. Be sure that no built-in protective devices are defective and/or have been defeated during servicing. (1) Protective shields are provided on this chassis to protect both the technician and the customer. Correctly replace all missing protective shields, including any removed for servicing convenience. (2) When reinstalling the chassis and/or other assembly in the cabinet, be sure to put back in place all protective devices, including, but not limited to, nonmetallic control knobs, insulating fishpapers, adjustment and compartment covers/shields, and isolation resistor/capacitor networks. **Do not operate this instrument or permit it to be operated without all protective devices correctly installed and functioning.**

b. Be sure that there are no cabinet openings through which an adult or child might be able to insert their fingers and contact a hazardous voltage, Such opening include, but are not limited to, (1) spacing between the picture tube and the cabinet mask, (2) excessively wide cabinet ventilation slots, and (3) an improperly fitted and/or incorrectly secured cabinet back cover.

c. Leakage Current Hot Check «With the instrument completely reassembled, plug the AC line cord directly into a 120V AC outlet. (Do not use an isolation transformer during this test.) Use a leakage current tester or a metering system that complies with American National Standards Institutes (ANSI) C101.1 Leakage Current for Appliances and Underwriters Laboratories (UL) 478. With the instrument AC switch first in the ON position and then in the OFF position, measure from a known earth ground (metal waterpipe, conduit, etc.) to all exposed metal parts of the instrument (antennas, handle bracket, metal cabinet, screwheads, metallic overlays, control shafts, etc.), especially any exposed metal parts that offer an electrical return path to the chassis. Any current measured must not exceed 3.5 milliamp. Reverse the instrument power cord plug in the outlet and repeat test. **ANY MEASUREMENTS NOT WITHIN THE LIMITS SPECIFIED HEREIN INDICATE A POTENTIAL SHOCK HAZARD THAT MUST BE ELIMINATED BEFORE RETURNING THE INSTRUMENT TO THE CUSTOMER.**



AC Leakage Test

(READING SHOULD NOR BE ABOVE 3.5mA)
LEAKAGE CURRENT TESTER
DEVICE UNDER TEST
+
-
TEST ALL EXPOSED METAL SURFACES
3. WIRE CORD
ALSO TEST WITH PLUG REVERSED (USING AC ADAPTER PLUG AS REQUIRED)
EARTH GROUND

2. Read and comply with all caution and safety-related notes on or inside the Monitor cabinet, on the Projection Monitor chassis, or on the picture tube.

3. Design Alteration Warning «Do not alter or add to the mechanical or electrical design of this unit. Design alterations and additions, including, but not limited to, circuit modifications and the addition of the items such as auxiliary audio and/or video output connections might alter the safety characteristics of this Projection Monitor and create a hazard to the user. Any design alterations or additions will void the manufacturer's warranty and will make you, the service, responsible for personal injury or property damage resulting therefrom.

4. Hot Chassis Warning «a. Some Monitor chassis are electrically connected directly to one conductor of the AC power cord and may be safely serviced without an isolation transformer only if the AC power plug is inserted so that the chassis is connected to the ground side of the AC power source. To confirm that the AC power plug is inserted correctly, with an AC voltmeter measure between the chassis and a known earth ground. If a voltage reading in excess of 1.0V is obtained, remove and reinsert the AC power plug in opposite polarity and again measure the voltage potential between the chassis and a known earth ground. **b.** Some Monitor chassis normally have 85V AC (RMS.), between chassis and earth ground regardless of the AC plug polarity. These chassis can be safely serviced only with an isolation transformer inserted in the power line between the receiver and the AC power source, for both personnel and test equipment protection. **c.** Some Projection Monitor chassis have a secondary ground systems in addition to the main chassis ground. This secondary ground system is not isolated from the AC power line. The two ground system are electrically separated by insulating material that must not be defeated or altered.

5. Observe original lead dress. Take extra care to assure correct lead dress in the following areas: **a.** near sharp edges, **b.** near thermally hot parts «be sure that leads and components do not touch thermally hot parts, **c.** the AC supply, **d.** high voltage, **e.** antenna wiring. Always inspect in all areas for pinched, out-of-place, or frayed wiring. Do not change spacing between components, and between components and the printed-circuit board. Check AC power cord for damage.

6. Components, parts, and/or wiring that appear to have overheated or are otherwise damaged should be replaced with components, parts, or wireing that meet original specifications. Additionally, determine the cause of overheating and/or damage and, if necessary, take corrective action to remove any potential safety hazard.

7. PRODUCT SAFETY NOTICE «Many Monitor electrical and mechanical parts have special safety-related characteristics some of which are often not evident from visual inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified in this service data by shading with a ⚠ mark on schematics and by shading or a ⚠ mark in the parts list. Use of a substitute replacement part that does not have the same safety characteristics as the recommended replacement part in this service data parts list might create shock, fire, and/or other hazards.

SPECIFICATION

VER 1.0

1. SCOPE

These specifications describe all the characteristics of the 32 inch color monitor.

2. ELECTRICAL REQUIREMENTS

2.1. Cathode ray tube

a. Tube size	32 inch
b. Dot pitch	H = 0.8 mm
c. Light transmission	35.5% typical
d. CRT TYPE NAME	TOSHIBA (M81AHM50X01)

2.2. Power

a. Input voltage	100 ~ 240 Vac , 50 / 60 Hz
b. Input current	2.5 A at 110 Vac / 60 Hz
c. Inrush current	50 A
d. Power consumption	220 Watts
e. Line regulation	95 to 145 Vac / 60 Hz ~ 190 to 255 Vac / 50Hz
f. Stand-by	less than 10 watts

2.3. Input signal

2.3.1 Video signal

a. Type	Analog
b. Polarity	Positive
c. Amplitude	0.714 V_{P-P}
d. Input impedance	75 ohms
e. Dot rate	50M Hz (Max.)

2.3.2 Horizontal sync

a. Type	TTL
b. Polarity	Positive or Negative
c. Input impedance	1K ohms
d. Frequency	RGB:31 KHz to 48 KHz AV :15.734 KHz (NTSC) / 60 Hz 15.625 KHz (PAL) / 50 Hz

2.3.3 Vertical sync

a. Type	TTL
b. Polarity	Positive or negative
c. Input impedance	1K ohm (Min.)
d. Frequency	50 Hz to 90 Hz

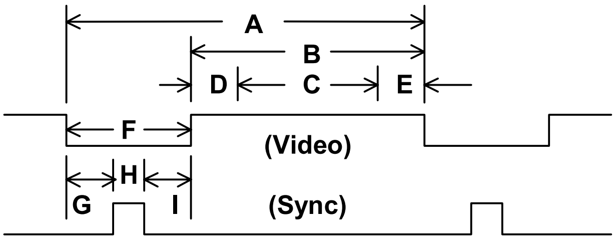
2.3.4 Connector type

15 pin D-SUB and RCA JACK and S-terminal

2.3.5 Pin assignments for D-SUB connector

Pin 1 : RED
Pin 2 : GREEN
Pin 3 : BLUE
Pin 4 : GND
Pin 5 : GND
Pin 6 : RED GND
Pin 7 : GREEN GND
Pin 8 : BLUE GND
Pin 9 : NC
Pin 10 : GND
Pin 11 : GND
Pin 12 : SDA
Pin 13 : H-SYNC
Pin 14 : V-SYNC
Pin 15 : SCL

2.3.6 Preset timing chart



Item	Description :
A	Total time
B	Active display area including borders
C	Active display area excluding borders
D	Left / Top border
E	Right / bottom border
F	Blanking time
G	Front porch
H	Sync width
I	Back porch

The table below is required timings and technical description for the 32“ tube.

(H = 620 mm, V = 465 mm standard size)

Mode No.	1	2	3	4	5	6	7	8	9	
Resolution & Refresh Rate	640 480 60	640 480 72	720 400 70	640 480 66.6	800 600 60.317	800 600 56.25	640 480 85	800 600 72	1024 60 60	Hz
Pixel timing +/- .5%	39.722	31.746	35.311	33.06	25	27.8	36	50	15.385	n Sec
Horizontal visible	640	640	720	640	800	800	640	800	1024	Dots
Horizontal total	800	832	900	864	1056	1024	832	1040	1344	Dots
Horizontal front porch	16	16	18	64	40	24	56	56	40	Dots
Horizontal sync	96	40	108	64	128	72	56	120	145	Dots
Horizontal back porch	48	136	54	96	88	128	80	64	105	Dots
Hor blanking time	160	192	180	224	256	224	192	240	290	Dots
Vertical visible	480	480	400	480	600	600	480	601	768	Lines
Vertical total	525	520	449	525	628	625	509	667	806	Lines
Vertical front porch	10	1	12	3	1	1	1	1	1	Lines
Vertical sync	2	3	2	3	4	2	3	6	6	Lines
Vertical back porch	33	36	35	39	23	22	22	23	29	Lines
Vertical blanking time	45	40	49	45	28	25	26	30	36	Lines
Horizontal frequency	31.469	37.861	31.467	35	37.879	35.156	43.27	48.09	48.363	KHz
Vertical frequency	59.940	72.809	70.082	66.667	60.317	56.250	85	72	60	Hz
Vertical sync polarity	-	-	+	-	+	+	-	+	-	TTL
Hor sync polarity	-	-	-	+	+	+	-	+	-	TTL
Dot rate	25.2	31.2	28.3	30.204	40	35.97	36	50	65	MHz

2.4. Display performance requirements.
The data of display performance are measured based on the following conditions unless otherwise specified.

a. Ambient temperature	25 ±5 degree C
b. Earth magnetic field :	H : 0.00, V : 0.4 ±0.05 Gauss
c. Warm up period	30 minutes minimum
d. Line input voltage :	Nominal 120 Vac / 60 Hz ~ 220 Vac / 50 Hz
e. Unit facing direction	With CRT screen facing east
f. Viewing distance	Distance from screen is 81 cm
g. Display mode	Test with full white pattern of mode 1 if not specified.
h. Brightness condition	Press reloads button to set Brightness to center point and adjust contrast control to 15 FL.
i. Heater voltage	6.0 ±0.3Vdc
j. HV Operation	31 ±1KV

2.4.1	Maximum Resolution	1024 dots x 768 lines (non-interlace)
2.4.2	Horizontal size (Standard) Vertical size (Standard)	620 ±8 mm (for mode 1 9) 465 ±8 mm (for mode 1 9)
2.4.2.1	Horizontal size (max) Vertical size (max)	Mode 1-6 Over-scan Mode 7-9 full-scan
2.4.3	Size thermal drift	Within ±8 mm (The size drift is being compared between the range of operating and ambient temperature.)
2.4.4	Size regulation	1. Less than 7 mm (MODE 1 (MODE 6) (The size regulation is being compared the size change between the max. and min. brightness level.) 2. Less than 7 mm (MODE 7 (MODE 9) (The size regulation is being compared the size change between the recall. and min. brightness level.)

2.4.5 Maximum brightness level

a. Full white pattern	21 +5, -2 FL at the screen center. (While pressing reload button to set contrast and brightness control at max.)
b. 100% center block white pattern	More than 68 FL. (While pressing reload button to set contrast and brightness control at max.)
c. Minimum brightness level (ALL WHITE PATTERN)	With the contrast at min and brightness at central. Less than 5 FL.
d. Raster background	0.5 FL ±0.3 FL. (With the contrast max, brightness at max and black signal)

2.4.6 Brightness uniformity
(Test with five circle mosaic pattern and set the brightness level of center circle at 15FL.)

$$\frac{\text{Brightness (corner circle)}}{\text{Brightness (center)}} > 50\%$$

2.4.7	Linearity (Test with cross-hatch pattern. H: 17 Line, V: 13 Line)	Less than 15% for both H & V $\left(\frac{X\ (max.) - X\ (min.)}{X\ (max.)} X100\%\right) \quad 15\%$

2.4.8 Distortions requirement

a. Total Geometric distortion (See FIG. 1)	TOP & BOTTOM	8 mm
	LEFT & RIGHT	8 mm
b. Barrel (See FIG. 2)	TOP & BOTTOM	6 mm
	LEFT & RIGHT	6 mm

2.4.9	Tilt (Raster Rotation)	Less than † 4 mm (The tilt is being Compared between the horizontal center line of the image with respect to that of the bezel.)
2.4.10	Misconvergence (See FIG. 5)	Zone A: 1.0 mm (465 mm) Zone B: 1.5 mm (Within the image area of 620 mm x 465 mm except zone A.) Zone C: 1.8 mm (Except zone A and B.)
2.4.11	Focus (with mode 1 (mode 9) (Test with H character pattern.)	The individual dot and line of characters on the screen should be clearly distinguishable. (Setting the Cut-off raster brightness level at H pattern.)
2.4.12	CRT quality	The screen & faceplate blemishes requirement is defined based on CRT specification.
2.4.13	Color temperature (PATTERN=ALL WHITE PATTERN.)	X : 0.285 †0.030 Y : 0.295 †0.030
2.4.14	Color tracking (Test full white pattern.)	X : X_0 †0.030 Y : Y_0 †0.030 brightness=128,change contrast control range from 4.5 FL to max

2.4.15 Internal service controls :

HV-ADJUST (31 †1KV)	H-Center	DC B+ ADJUST (210 †1V)
FBT SCREEN KNOB	FBT FOCUS	

2.4.16 External user controls : (With OSD Control)

RGB :	**BRIGHTNESS**	**CONTRAST**	**V-SIZE**	**H-CENTER**	**H-WIDTH**
	H-PHASE	**PINCUSHION**	**TRAPEZOID**	**PARALLELOGRAM**	**ROTATION**
	R-GAIN	**G-GAIN**	**B-GAIN**		
AV. :	**BRIGHTNESS**	**CONTRAST**	**COLOR**	**TINT**	**SHARPNESS**
	R-GAIN	**G-GAIN**	**B-GAIN**		
COMMON :	**POWER**	**MUTE**	**DEGAUSS**	**WOOFER VOLUME**	**RECALL**
	INPUT	**BASS**	**TREBLE**	**BALANCE**	

FRONT PANEL FUNCTION KEY : VOLUME +/- INPUT SELECT DEGAUSS,
MENU +/- POWER SWITCH

3. MECHANICAL REQUIREMENTS

3.1. Unit dimension (with base) :	**W (886) x H (718) x D (583) mm**
Packaging dimension :	**W (1035) x H (888) x D (765) mm**
3.2. Net weight of unit :	**71Kgs**

4. Environmental requirements

4.1. Non-operating

a. Ambient temperature	**- 15 degree C to 50 degree C (5 degree F to 122 degree F)**
b. Relative humidity	**10% RH to 95% RH (non-condensing)**
c. Altitude	**10,000 feet**

4.2. Operating

a. Ambient temperature	**0 degree C to 40 degree C (32 degree F to 104 degree F)**
b. Relative humidity	**10% RH to 95% RH (non-condensing)**
c. Altitude	**10,000 feet**

5. Reliability requirement

The MTBF needs 40000 hours (excluding tube) under operating at 25 ±5 degree C (77 ±41 degree F) ambient temperature also with the normal characters filled within the whole image screen.

6. Regulatory requirements

6.1. Safety requirement.

The unit shall conform to the following safety regulatory standards.

a. UL 1950	**Safety of Information Technology Equipment Including Electrical Business Equipment**
b. CSA 22.2 No. 950-M89	**Safety of Information Technology Equipment Including Electrical Business Equipment**
c. TUV No. EN 60950 EN 60065	**Safety of Information Technology Equipment Including Electrical Business Equipment**

6.2. X Radiation requirement.
The unit shall conform to the following X-ray regulatory standards and must not emit more than 0.5 mR/H of ionizing radiation under normal operation or under a fault condition.

a. DHHS 21 CFR 1020.10 Department of Health and Human Services Radiation Performance Standard; Title 21 CFR subject J, for Radiological Health (US)

6.3. Emission requirements.
The unit shall meet the EMI limits in all screen modes. For EMI testing, the unit must be filled with a screen pattern consisting of scrolling capital “H” characters also the brightness and contrast VR will be adjusted to max. level.

a. FCC Class B FCC part 15, Subpart J, Class B (US)

7. POWER MANAGEMENT:

Mode	H-sync	V-sync	Video	Power dissipation
Normal	pulse	pulse	active	normal power
Stand-by	no pulse	no pulse	no video	power off
Power saving	pulse	no pulse	blanked	less than 30 watts
	no pulse	pulse		

This monitor is Energy star compliant when used with a computer equipped with DPMS.
Note: The power indicator LED color is green in normal state, red in stand-by and yellow in power saving state.

Attachment: Internal reference specification.
The following specifications are provided to Production Engineering and Quality Assurance Departments for factory internal control only.

Item no. and contents of product specification		Customer requirements
2.4.2	Horizontal size / vertical size	620 / 465 mm †8 mm
2.4.3	Size thermal drift	within 8 mm
2.4.4	Size regulation	within 7 mm
2.4.5	a. Max. brightness level (full white) b. Max. brightness level (100% center block white pattern)	21 FL +5 / -2 FL 73 FL +7 / -5 FL (MODE 1)
2.4.6	Brightness uniformity	greater than 50%
2.4.7	Linearity	H 15% V 15%
2.4.8	a. Geometric distortion TOP : BOTTOM : b. Barrel TOP : BOTTOM :	within 8 mm within 8 mm within 6 mm within 6 mm
2.4.9	Tilt (Raster Rotation)	within 4 mm
2.4.10	Misconvergence	within A:1.0, B:1.5, C: 1.8
2.4.11	Focus	Reference page 5
2.3.13	Color temperature	X : 0.285 †0.030 Y : 0.295 †0.030
2.3.14	Color tracking	X : X_0 †0.030 Y : Y_0 †0.030
7.	POWER MANAGEMENT : a. Power saving	P_C < 30 watts

AV. SECTION: (ACCORDING TO CTV RULES)
video signal compatibility NTSC / PAL / SECAM

1. Picture quality

1.1. Resolution (center)
Contrast and brightness is adjusted so that the 25% gray bar is at cut off of CRT 300 lines min.

2. Linearity # formula: (max. - min.) / max. #

Vertical	10%	13% max.
Horizontal	10%	14% max.

3. Sound (tone & balance at central position)

3.1. Residual hum (at volume control max.)	**500uW max.**

3.2. Practical max. audio output (at 10% THD max.)

1.3V_{P-P}	1K Hz input	10W min. / 7 ohm

3.3. Audio fidelity (400 Hz 0db, Corrected for emphasis characteristics)

Woofer off	100 Hz	1 dB	3 dB
Woofer off	10K Hz	-1 dB	3 dB

3.4. Sound distortion (at 250mW 1K Hz)	**1% max. with LPF(15.734KHz)**

4. Video and audio (full load)

4.1. Video signal output **(input signal at 1.0 V_{P-P} † 0.2 V_{P-P})**	**1.0 V_{P-P} † 0.2 V_{P-P}.**
4.2. Audio signal output **(input signal at 1.0 V_{P-P} † 0.2 V_{P-P})**	**1.0 V_{P-P} † 0.2 V_{P-P}.**

5. Total Geometric Distortion

5.1. Pincushion(FIG. 4)

Top-bottom	3% max.
Left-right	3% max.

***Pattern = crosshatch**

5.2. Trapezoid (FIG. 3)

Horizontal	3.0% max.
Vertical	3.0% max.

FIG. 1 Total Geometric Distortion:

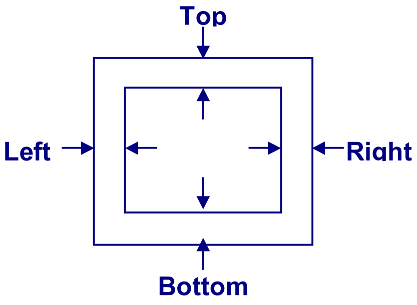


FIG. 2 Barrel:

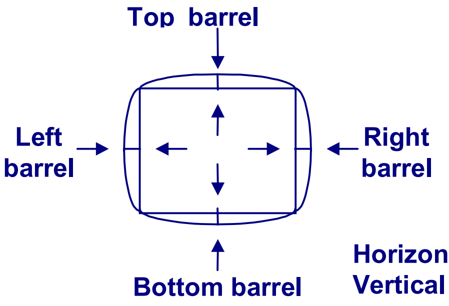
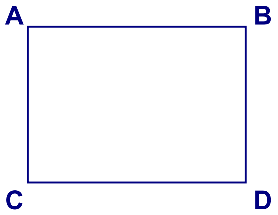
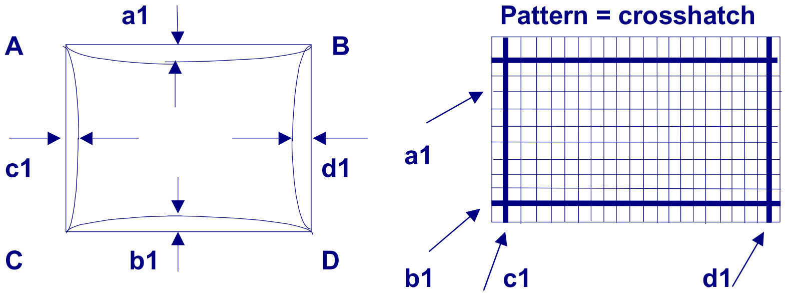


FIG. 3 Trapezoid:



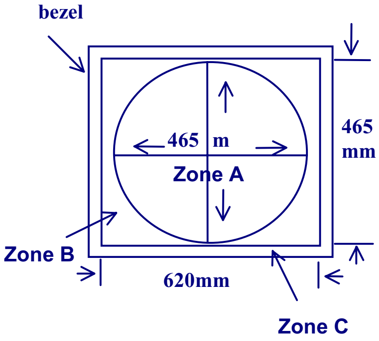
Horizontal = (AD-BC) / (AD+BC)x100
Vertical =(AB-DC) / (AB+DC)x100

FIG. 4 PINCUSHION: (AV)

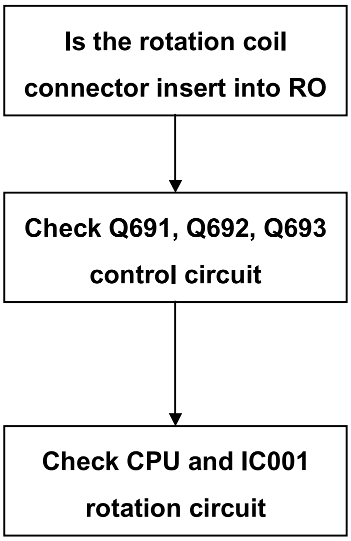


Top-bottom=2(a1+b1)/(AC+BD)x100%
Left-right =2(c1+d1)/(AB+CD)x100%

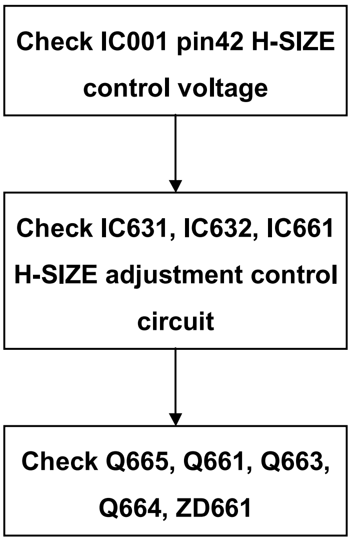
FIG.5 Misconvergence



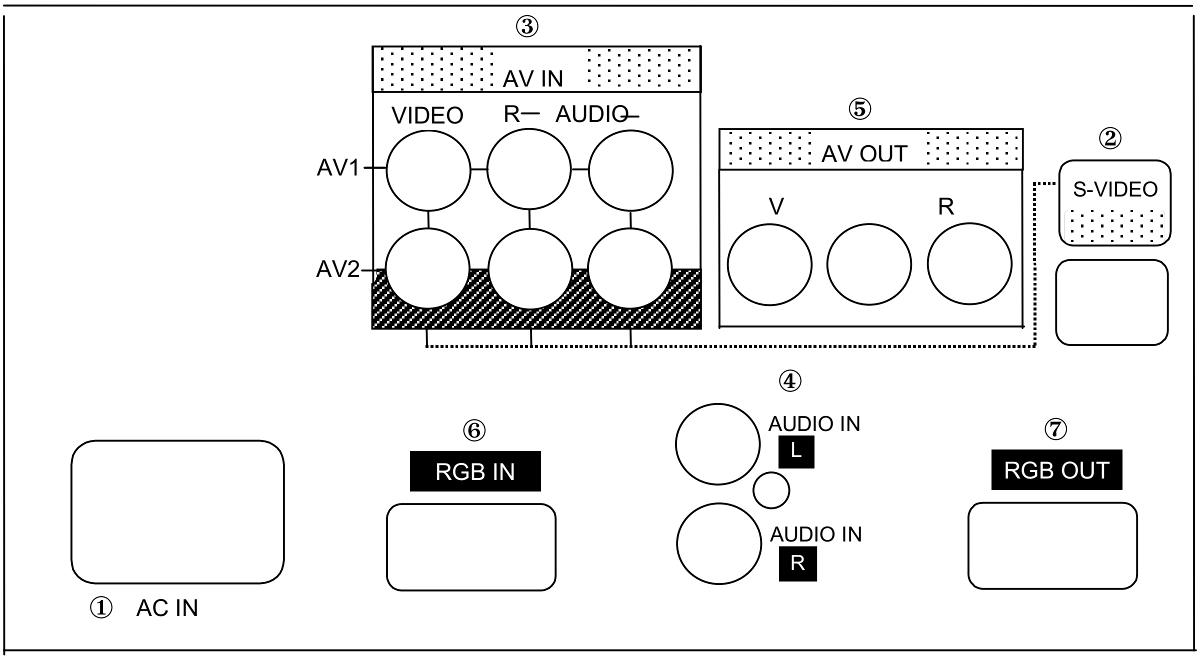
5. NO ROTATION FUNCTION


Is the rotation coil connector insert into RO
Check Q691, Q692, Q693 control circuit
Check CPU and IC001 rotation circuit

6. H-SIZE CAN NOT BE ADJUSTED


Check IC001 pin42 H-SIZE control voltage
Check IC631, IC632, IC661 H-SIZE adjustment control circuit
Check Q665, Q661, Q663, Q664, ZD661

CONNECTING YOUR DISPLAY



1. **AC IN :** This terminal is for AC power cord.

2. **S-VIDEO :** This terminal (select AV2 mode) is for S-VIDEO signal cable, used with S-VIDEO equipment.

3. **AV IN :** These terminals are for video and stereo sound signals, used with video equipment.

4. **RGB AUDIO IN:** These terminals are for sound signal when monitor is in RGB mode.

5. **AV OUT:** These terminals can output video and sound signals that your monitor is using.

6. **RGB IN**: This terminal is for RGB analog signal, use with IBM PC and other compatibles.

7. **RGB OUT**: This terminal can output RGB analog signal that your monitor is using.
(This terminal is for rear RGB IN signals)

NOTE :

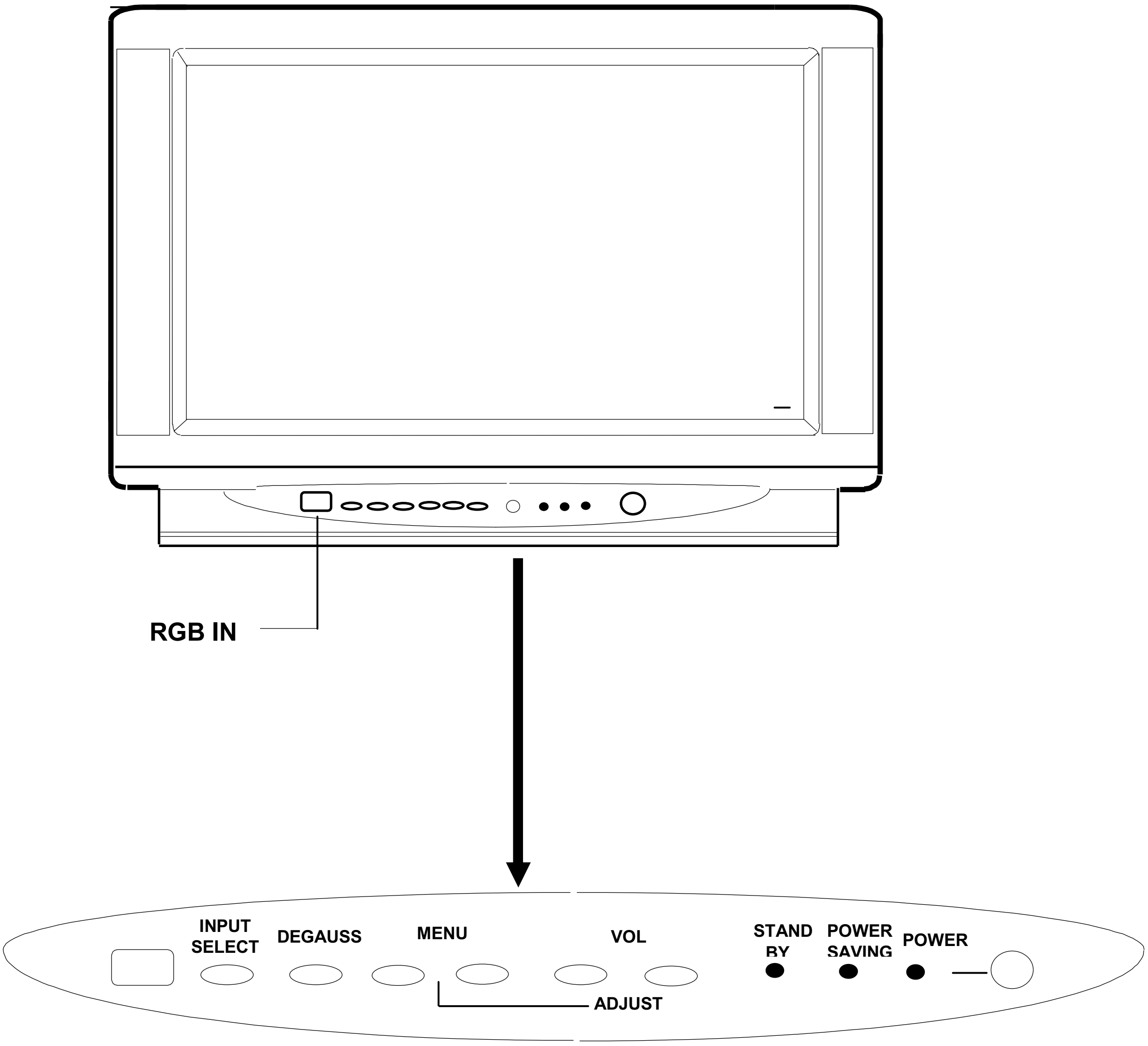
1. Please follow the above description when connecting your display.

2. If front RGB IN and rear RGB IN are connected simultaneously, front RGB IN has priority. To prevent interference, disconnect the rear RGB IN signal when the front RGB IN signal is in use.

LOCATION OF USER'S CONTROL

(ON FRONT PANEL)

Front view

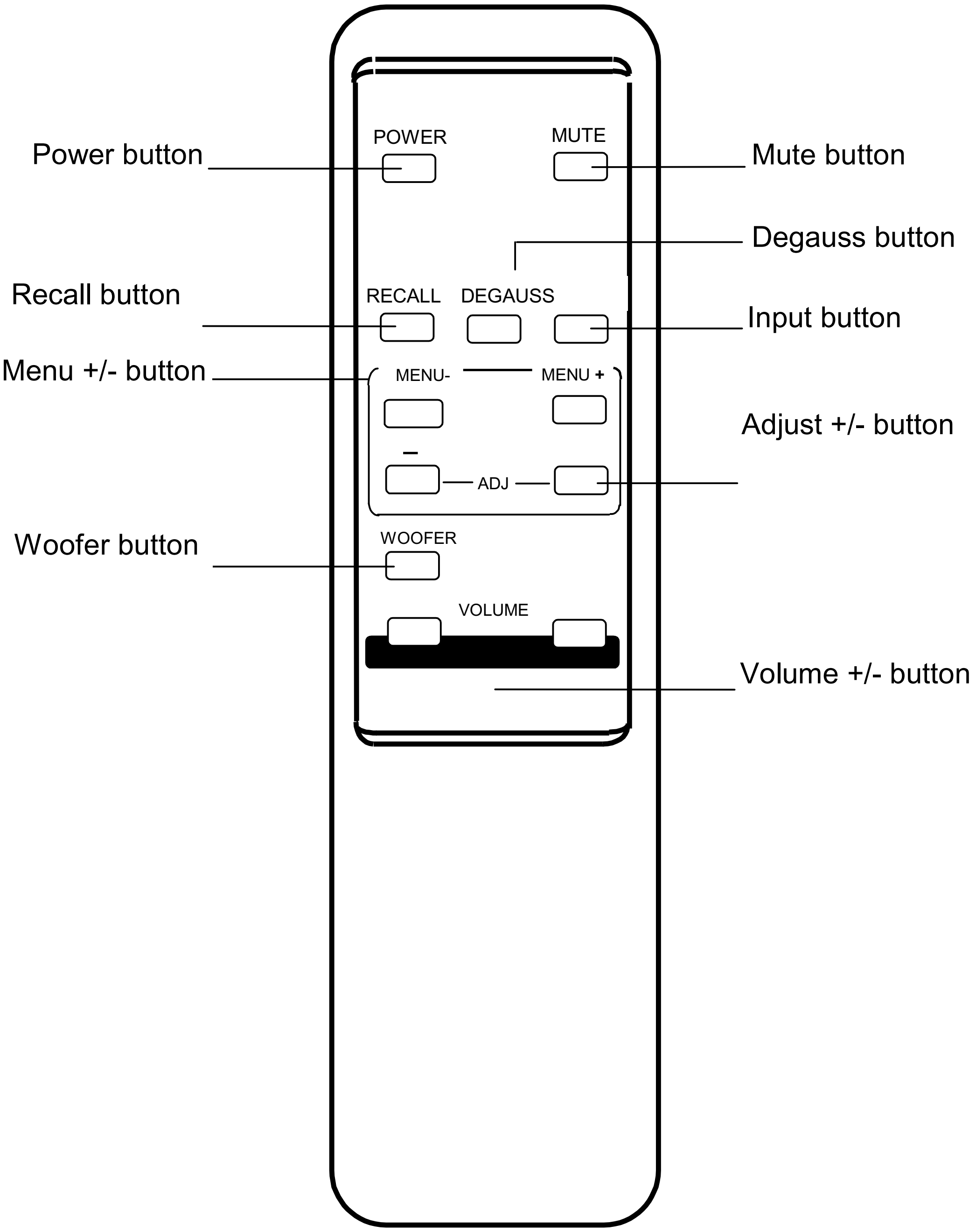


NOTE :

1. **RGB IN: Is used to Connect the RGB signal. For IBM PC and other compatibles.**
3. **The RGB INPUT terminals in the front and rear panels have the same function. They can connect to the signal source (PC) simultaneously. To prevent interference, do not switch the two signal sources (PC) on simultaneously.**

LOCATION OF USER'S CONTROL

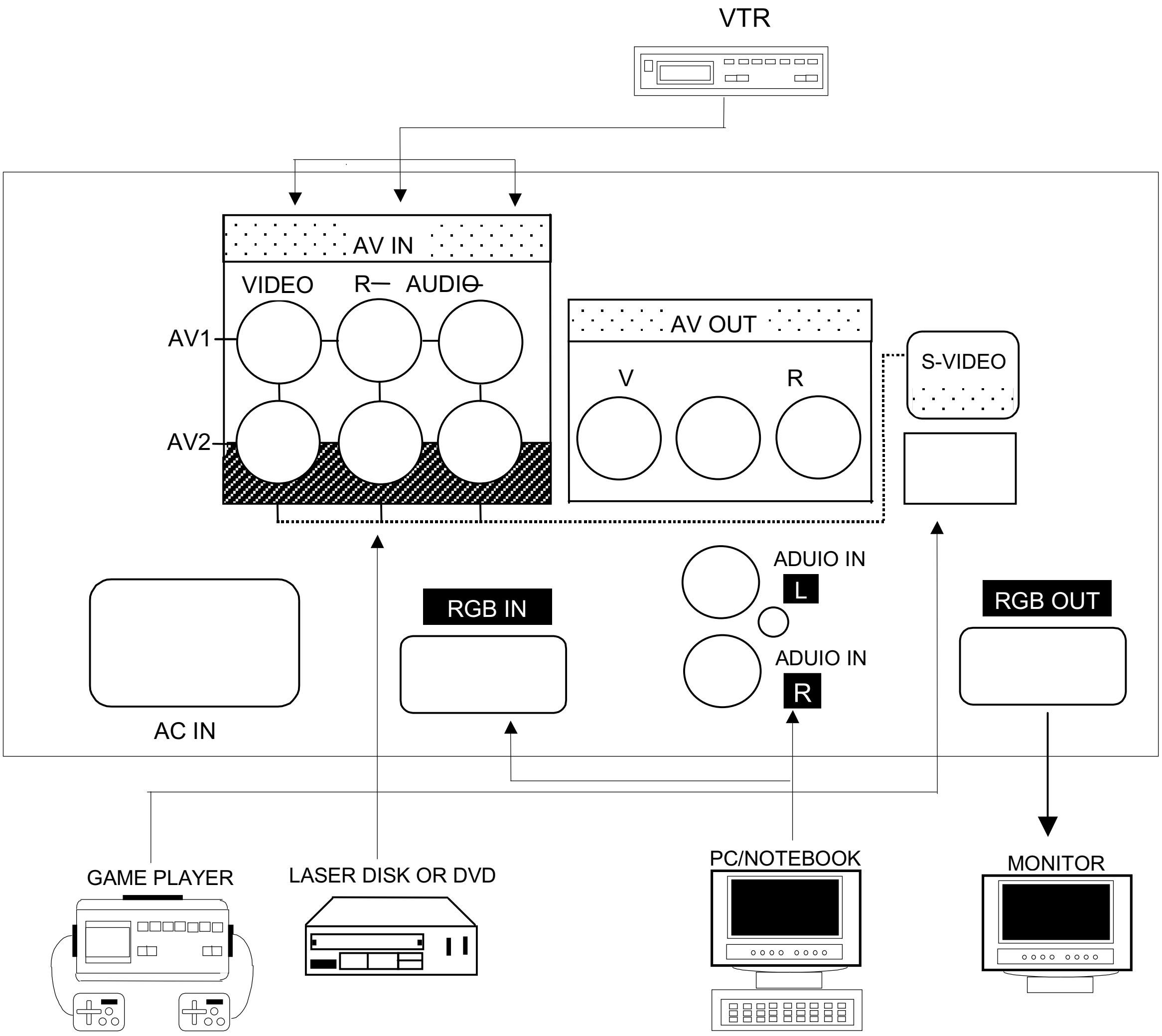
(ON REMOTE CONTROL)



INSTALLATION

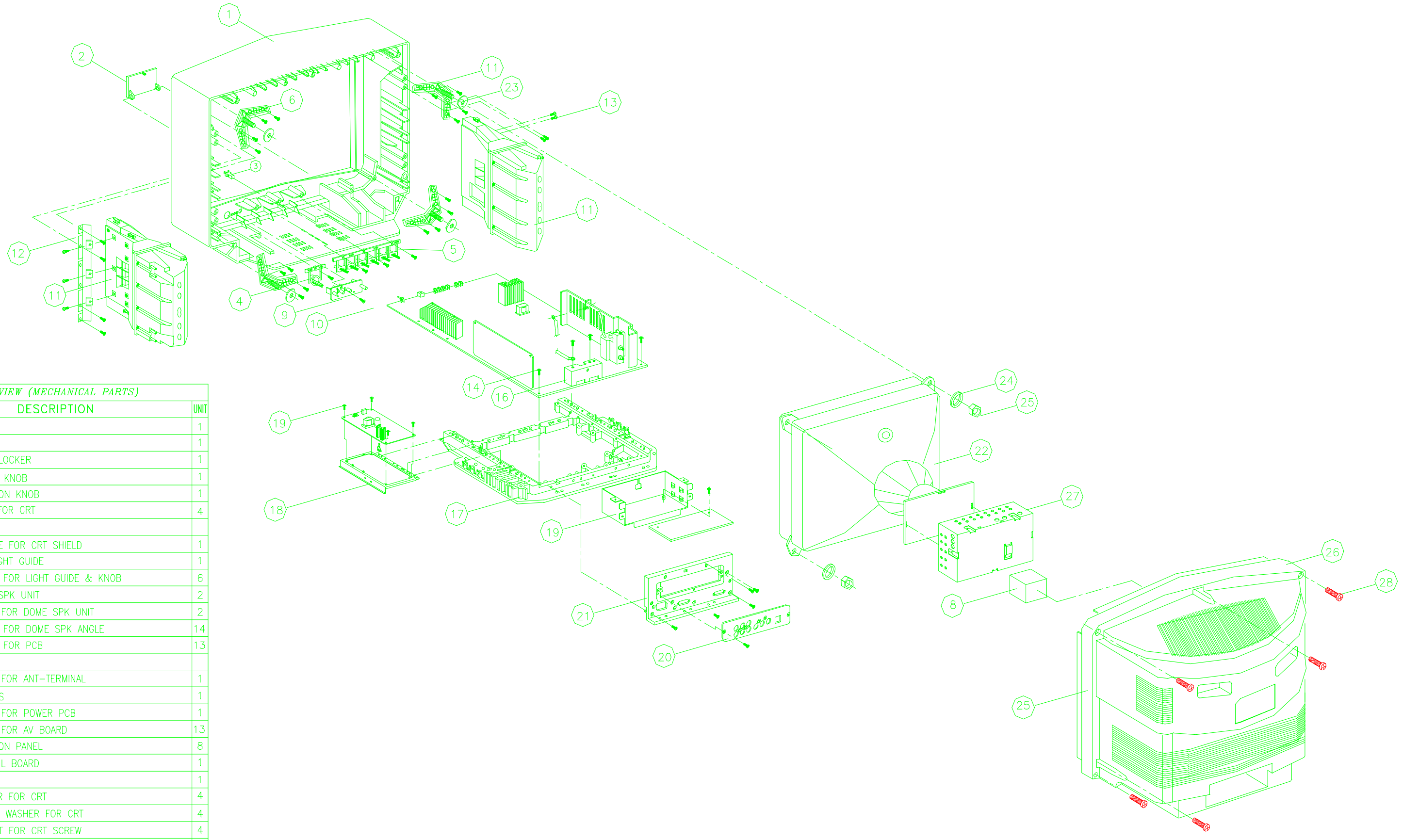
1. Before you connect any cables, refer to the safety instructions at the beginning of this manual and make sure your computer (or video equipment) and display are switched off .
2. Connect the video cable (AV, S-Video or RGB cable) and audio cable to your monitor.
3. Connect the AC power cord to your monitor.
4. Plug the AC power cord to a properly grounded outlet.
5. Turn on your computer or video equipment.
6. Turn on your monitor's power by pushing the power button. The power indicator should be illuminated.

NOTE : If the button does not function due to interference, disconnect from the mains for 10 seconds. Then reconnect and turn the power on.



DISASSEMBLY AND REASSEMBLY

www.rtv-horvat-dj.hr



SME-23DL3 EXPLODED VIEW (MECHANICAL PARTS)

ITEM	PART NO.	DESCRIPTION	UNIT
1	GCABA0226-1FD-A	BEZEL	1
2	GDORP0199-1F--C	DOOR	1
3	LHLD-0180-1----	DOOR LOCKER	1
4	JKNBP0510-1F---	POWER KNOB	1
5	JKNBP0511-1F---	FUNCTION KNOB	1
6	LSTN-0009-1F--A	HOLD FOR CRT	4
7			
8	PCUSU0061-1----	SPONGE FOR CRT SHIELD	1
9	PREFL0010-1F--A	LED LIGHT GUIDE	1
10	XEASD30P08000--	SCREW FOR LIGHT GUIDE & KNOB	6
11	DBOXS0014-1FD-S	DOME SPK UNIT	2
12	LANGS0056-1P--B	ANGLE FOR DOME SPK UNIT	2
13	XETSD40P16000--	SCREW FOR DOME SPK ANGLE	14
14	XEASD30P12000--	SCREW FOR PCB	13
15			
16	LANGF0729-1P---	ANGLE FOR ANT-TERMINAL	1
17	LCHSP0005-1F--I	CHASSIS	1
18	LANGP0180-1P--A	ANGLE FOR POWER PCB	1
19	LANGP0182-1P---	ANGLE FOR AV BOARD	13
20	HDECP0362-1F---	FUNCTION PANEL	8
21	QTMLA1113-1F--D	ANT TML BOARD	1
22	VBM81AHMSOX01--	CRT	1
23	LX-WZ001P-1----	WASHER FOR CRT	4
24	XWTSD80-65000--	SPRING WASHER FOR CRT	4
25	XNESD80-65000--	M8 NUT FOR CRT SCREW	4
26	GCABB0268-1FD--	REAR CAB	1
27	PSLDM0276-1P--B	SHIELD CASE FOR CRT BOARD	1
28	XETSD40P30000--	SCREW REAR CAB'T	8

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON PAGE 1 AND 2 OF THIS MANUAL.

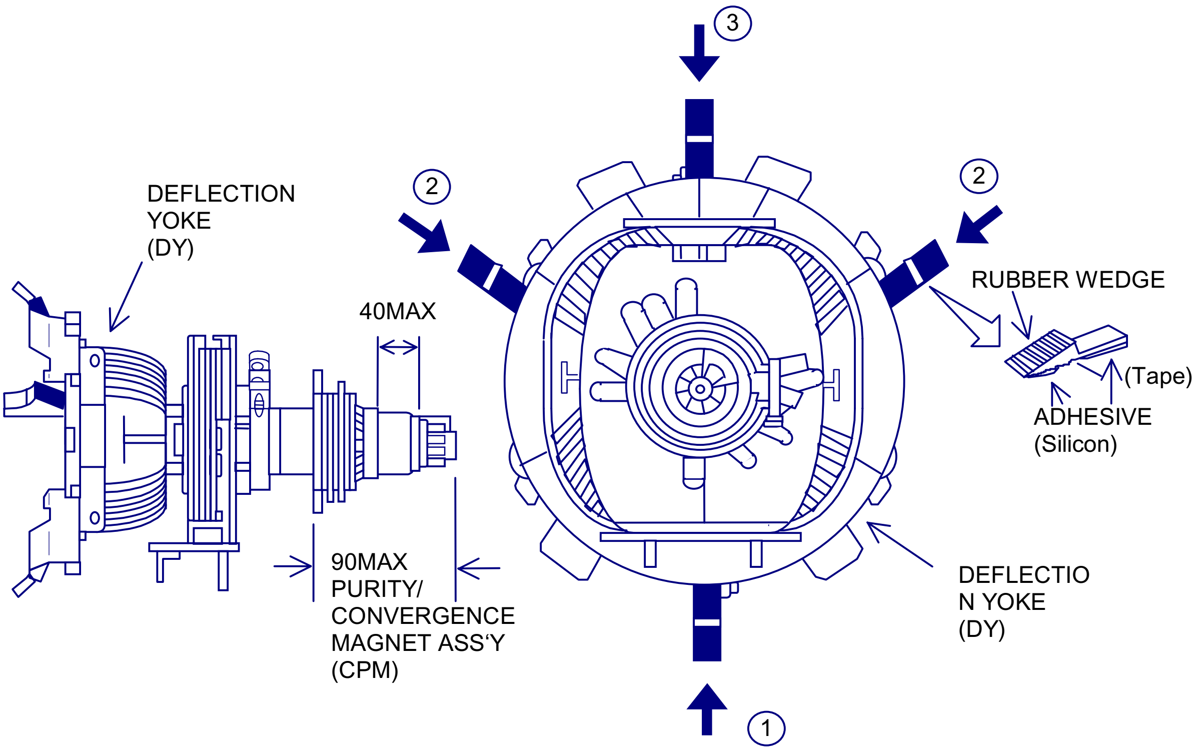
SET-UP ADJUSTMENT

- **The following adjustments should be made when a complete realignment is required or a new picture tube is installed.**
  Perform the adjustments in order as follows :

1. **Purity**
2. **Distortion (Vertical) balance**
3. **Convergence**
4. **Focus**

Note: The PURITY/CONVERGENCE MAGNET assembly and rubber wedges need mechanical positioning.

	PART DESCRIPTION	PART NO.
CPT	Picture tube, M81AHM50X01	VBM81AHM50X01
DY	Deflection yoke, YS-70840	RDY-N1004-1----

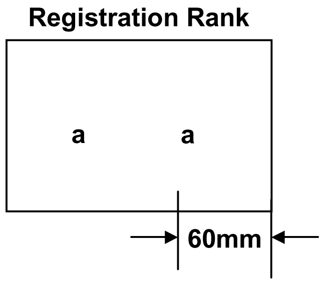


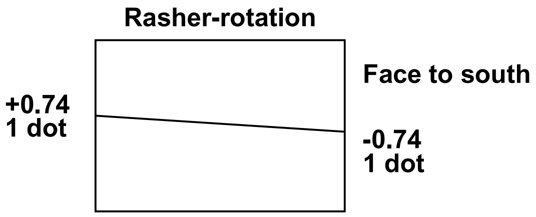
PURITY ADJUSTMENT

NOTE: Before attempting any PURITY ADJUSTMENTS, the receiver should be operated for at least 30 minutes at White Rasher.

1. **Demagnetize the picture tube and cabinet using a degaussing coil. (East direction)**
2. **Slowly move the DY forward or backward with moving 2 pole magnet of CPM until Green beam registration rank "a" is become**

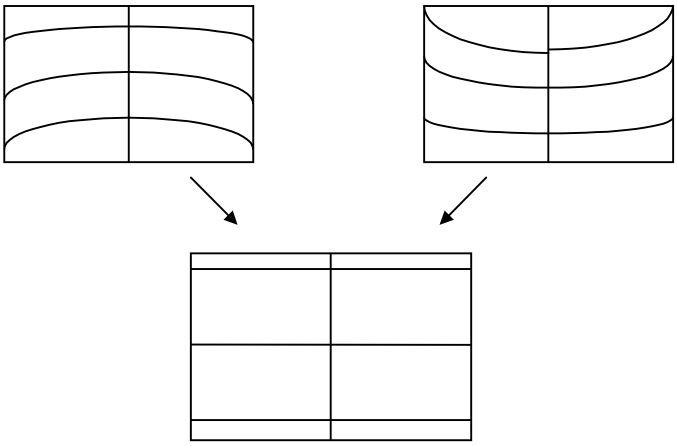
Tighten the clamp screw of the DY with correct rasher-rotation.





DISTORTION (VERTICAL) BALANCE ADJUSTMENT

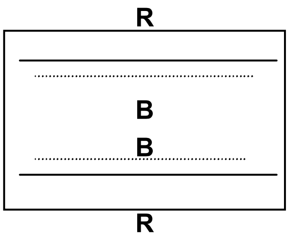
Tilt front of DY up or down to obtain best balance of Top and Bottom distortion.



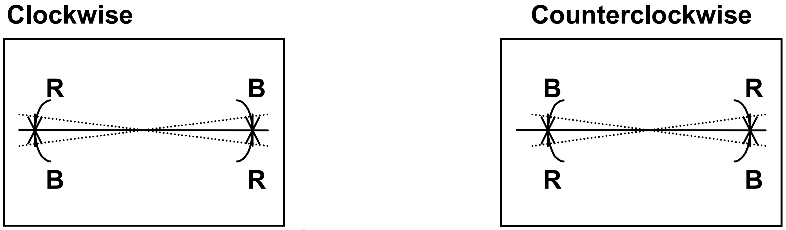
CONVERGENCE ADJUSTMENT

NOTE: Before attempting any convergence adjustment the receiver should be operated for at least 15 minutes.

1.Pan front of DY right or left to obtain better convergence of Yv (R or B wide pattern), and put d WEDGE into right and left space with temporary Mounting WEDGE.



2. **Xv misconvergence adjustment:**
   Adjust the Xv coil (on the deflection yoke) to correct misconvergence at both sides on screen. (See the figure below.)
   Use a hexagonal tip stick (plastic) to adjust the core of coil.



Xv Cross Pattern View

3. Center convergence adjustment

1) **Receive crosshatch pattern from a color bar/pattern generator.**
2) **Adjust the BRIGHTNESS and CONTRAST Controls for well defined pattern.**
3) **Adjust two tabs of the 4-Pole Magnets to change the angle between them (See figure 3.) and superimpose red and blue vertical lines in the center area of the picture screen.(See figure 4.)**
4) **Turn the both tabs at the same time keeping the constant angle to superimpose red and blue horizontal lines at the center of the screen. (See figure 4)**
5) **Adjust tow tabs of 6-Pole Magnets to superimpose red/blue line with green one. Adjusting the angle affects the vertical lines and rotating both magnets affects the horizontal lines.**
6) **Repeat adjustments 3, 4, 5 keeping in mind red, green and blue movement, because 4-Pole Magnets and 6-Pole magnets interact and make dot movement complex.**

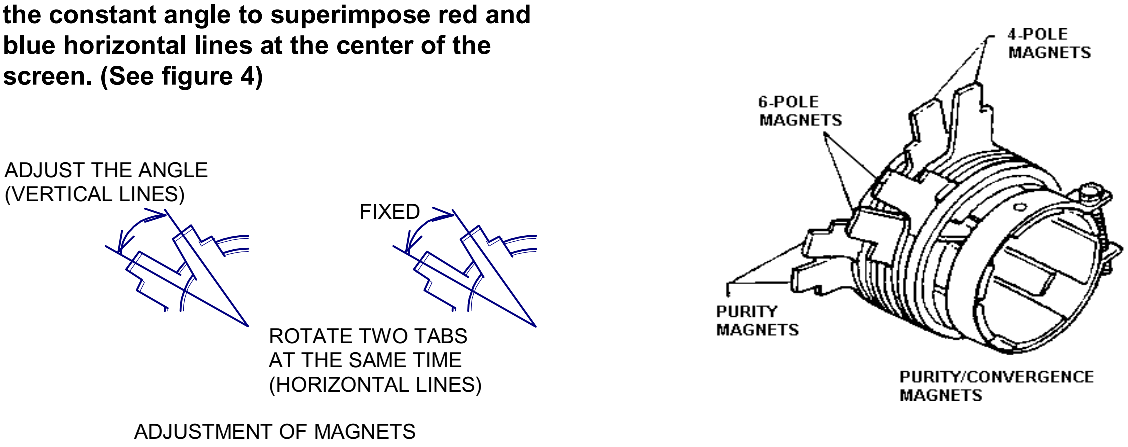
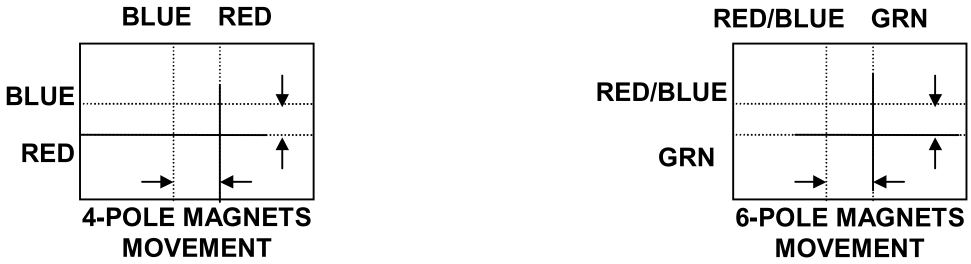


Figure 3.



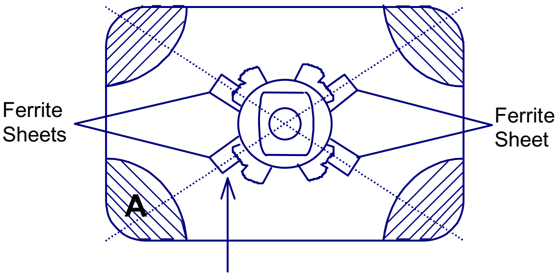
!
!
!
!

Center Convergence by Convergence Magnets
Figure 4.

4. Corner convergence adjustment:
When the misconvergence is still evident on corners even though the above adjustment is done, use the ferrite sheet to correct misconvergence.

Put ferrite sheets into the space under the yoke. Decide such position that misconvergence becomes minimum, watching picture screen. (See figure below.)

Remove cover paper of ferrite sheet to stick it in the place on the tube. Put adhesive tapes on ferrite sheets to fix.



For correcting misconvergence on the position A

FOCUS ADJUSTMENT

1. **Select the RGB mode.**
2. **Receive the "H" character signal from VGA signal generator.**
3. **Adjust the FOCUS control (FBT) and DYNAMIC FOCUS VR901 watching 4 corners for the best performance of a "H" character.**
4. **Recheck overall convergence.**

FACTORY & ELECTRONIC ADJUSTMETNT VER 1.0

A. The entry method for factory setting item.

1. Push the factory setting button on the R/C to go to factory setting mode.
2. When the monitor set is in “on” condition, pull the AC cord away. Then push the POWER SW continuously and insert the AC cord again. Do not release the POWER SW until the screen appear raster. When the above steps completed, it is in factory setting mode.

B. The selecting items of factory setting.

1. W-BALANCE ADJ. (white balance adjustment)
2. GEOMETRY ADJ. (geometry adjustment)
3. CHECK (factory check. It work for AV‘s function check)
4. AUTO RUN (FREE RUN 31K~38K for Burn In mode)
5. AUTO ADJ. (for IIC automatically adjustment used)
6. MTS SET

note: (1) Use the MENU +/- button to entry the desired selecting item.
(2) Use the ADJ. +/- button to entry this selected item
(3) Then use MENU +/- button again to select the adjusting items)

note: Only the item 1 and 2 of the factory adjustment are used to adjust. The others 3 items are used as the factory check.

note: The method for AUTO RUN:
Input the signal when in RGB mode. Then entry factory setting mode and select the AUTO RUN item. When the above steps are completed, take off the signal to into AUTO RUN MODE.

W-BALANCE ADJ. (white balance adjusting method)

A.	R.G.B.-BLACKLEVEL.....................	black level adjusting of white balance
B.	R.G.B.-GAIN....................................	white level adjusting of white balance
C.	SUB-CONT-RGB	
D.	SUB-CONT-AV	
E.	SUB-TINT	

Step:

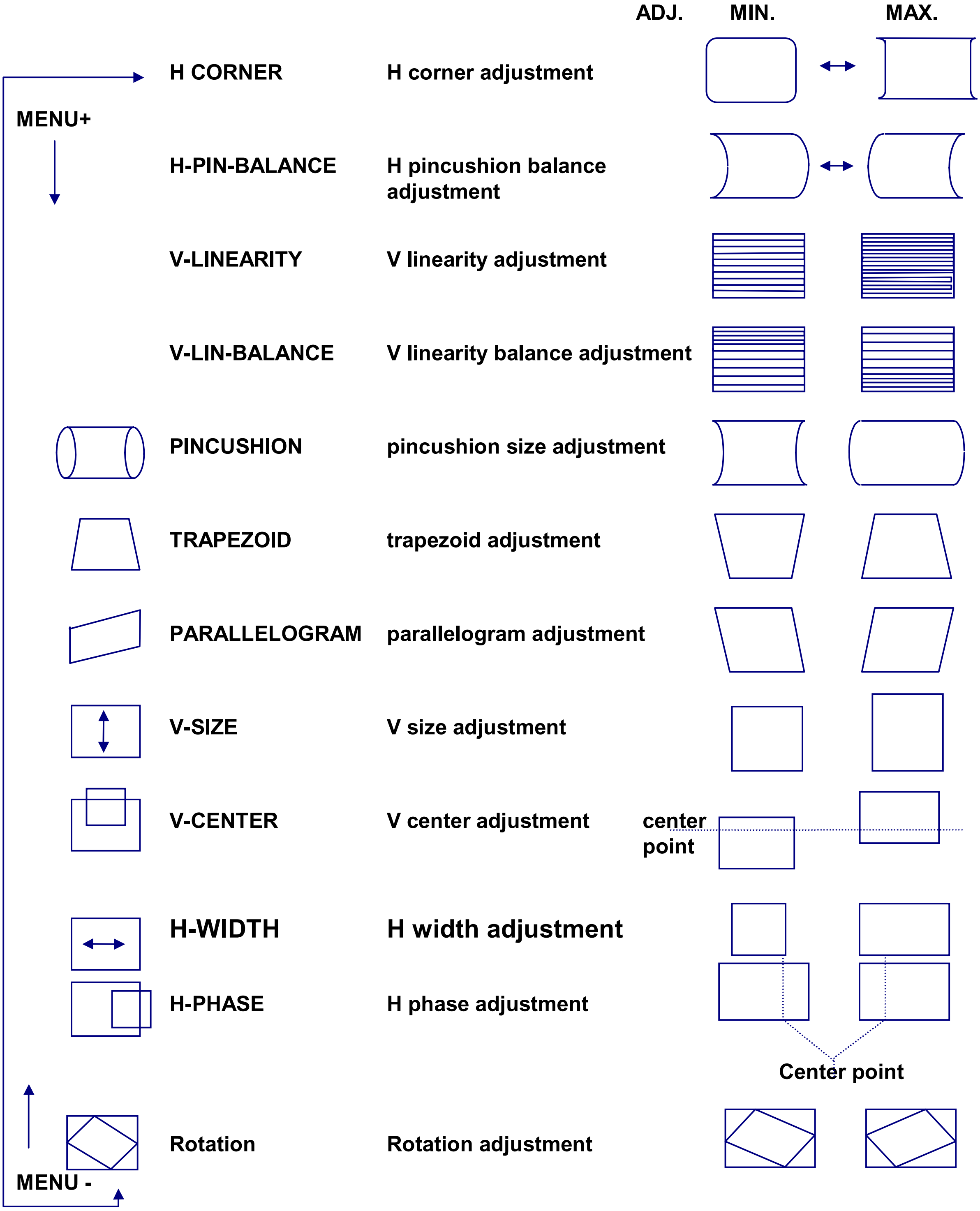
1. Set the BRIGHTNESS & CONTRAST at MAX.
2. Adjust the R.G.B.-BLACKLEVEL to min.
3. Do not adjust the background color. Then adjust the other two color to reach the standard color temperature (adjust the SCREEN VR at the same time)
4. Adjust R.B.-GAIN (G-GAIN fix at 190 to 200) to let the “x”, “y” value reach the standard color temperature. (forget the Y value preferential)
5. Adjust the SUB-CONT-RGB to let the “Y” value reach the standard value
6. Repeat item 1. to 3. to check the color temperature value of black level.

The standard color temperature.

Black level	x: 285	y: 295	Y: 0.45FL
White level	x: 285	y: 295	Y: 73FL

(100% Center block)

GEOMETRY-ADJ. ITEM



H CORNER	**H corner adjustment**
H-PIN-BALANCE	**H pincushion balance adjustment**
V-LINEARITY	**V linearity adjustment**
V-LIN-BALANCE	**V linearity balance adjustment**
PINCUSHION	**pincushion size adjustment**
TRAPEZOID	**trapezoid adjustment**
PARALLELOGRAM	**parallelogram adjustment**
V-SIZE	**V size adjustment**
V-CENTER	**V center adjustment**
H-WIDTH	**H width adjustment**
H-PHASE	**H phase adjustment**
Rotation	**Rotation adjustment**

The standard size.

H-SIZE: 620mm

V-SIZE: 465mm

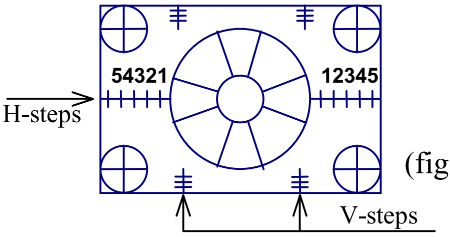
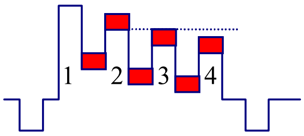
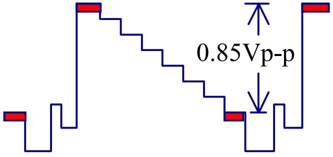
FACTORY & ELECTRONIC ADJUSTMENT VER 1.0

(1) RGB MODE

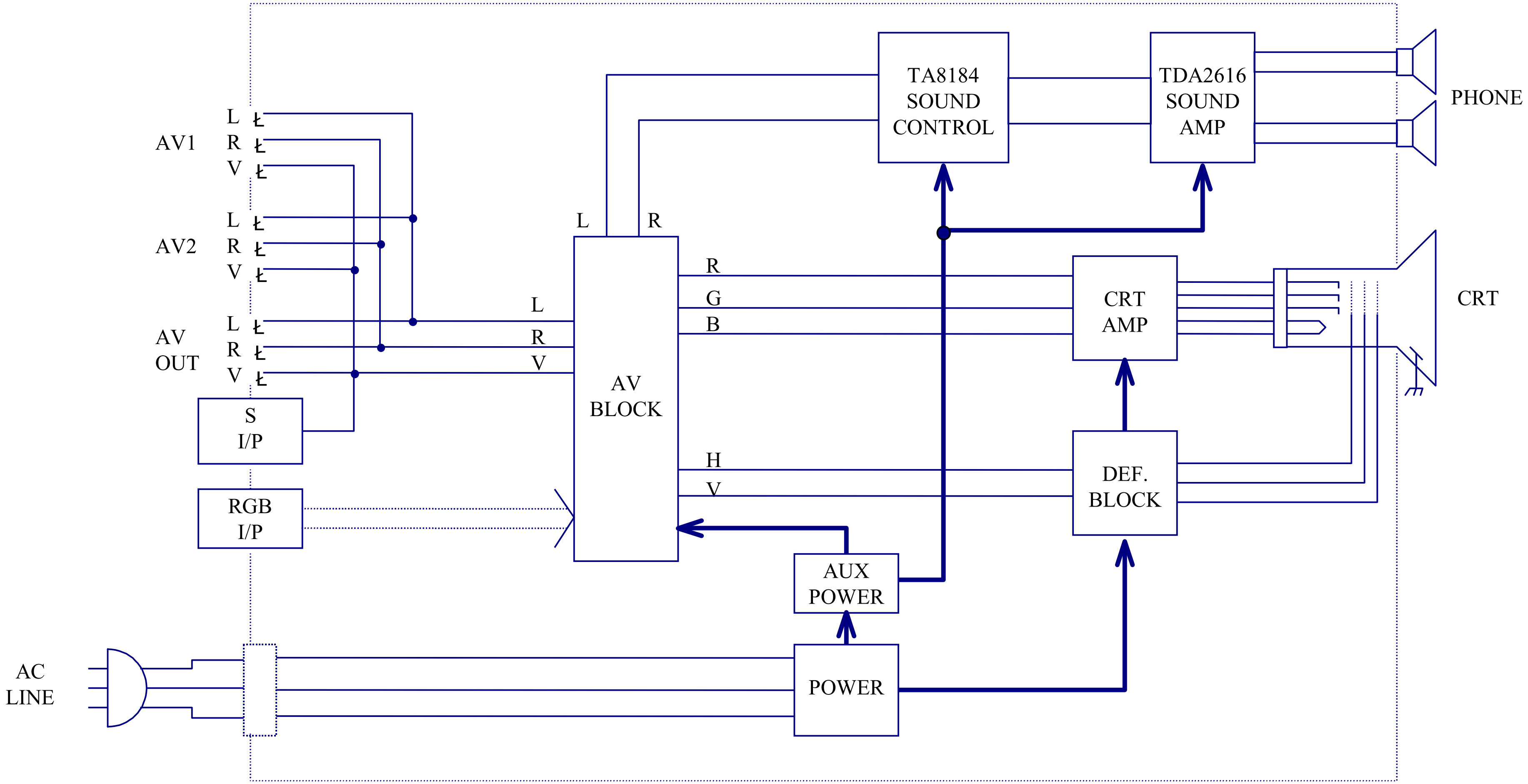
ITEM	ADJUSTMENT PROCEDURE.
1. adjustment (VR731)	1. Set to RGB mode. 2. Receive all white pattern (H:31.47K V:60Hz 640X480 mode). 3. Connect DC Volt-meter between cathode of D753 and ground. 4. Adjust VR731 for 208V ±0.5V output.
2. High voltage adjustment (VR691)	1. Connect HV meter. 2. Set to RGB mode. (H:31.47K V:60Hz 640X480 mode). 3. Receive CROSS HATCH pattern. 4. Set contrast and bright to standard.(Recall value) 5. Adjust VR691 to let the high voltage be 31 ±0.5KV.
3. H-Center adjustment (VR601)	1. Set to RGB mode. 2. Receive CROSS HATCH pattern (H:31.47K V:60Hz 640X480 mode). 3. Adjust VR601 to let the raster be located at center of CRT.
4. Trapezoid adjustment (under factory adjustment mode)	1. Set to RGB mode.(have six mode) 2. Receive CROSS HATCH pattern 3. Entry the second item of factory adjustment. 4. Find the trapezoid item and adjust the trapezoid to be best.
5. Geometry adjustment under factory adjustment mode)	1. Set to RGB mode. .(have six mode) 2. Receive CROSS HATCH pattern 3. Entry the item 2 of factory setting to select parallelogram item to adjust the parallelogram to be best.
6. V-Linear adjustment (under factory adjustment mode)	1. Set to RGB mode. 2. Receive CROSS HATCH pattern (H:31.47K V:60Hz 640X480 mode). 3. Entry item 2 and find V-Linearity adjustment of factory setting to adjust the V-linearity to be best.

ITEM	ADJUSTMENT PROCEDURE.
7. H-size adjustment (RGB mode) (under factory adjustment mode)	1. Set to RGB mode. 2. Receive CROSS HATCH pattern (we have six main modes, please see the specification of CHROMA-2135 generator pattern. 3. Entry the factory adjustment item 2 to choice the H-size adjustment. 4. Use the adjustment to let the H-size meet the specification (620mm for all main modes)
8. Focus adjustment (VR901, FOCUS)	1. Set to RGB mode. 2. Receive H or @ pattern (H:37.8K V:72Hz 640X480 mode) or whole letter Picture. 3. Adjust VR901 on CRT PWB and FOCUS VR of FBT to let the picture clear both at center and corner.
9. White balance adjustment (under factory adjustment mode)	1. Set to RGB mode. (H:31.47K V:60Hz 640X480 mode). 2. Receive back ground pattern (no Video Signal). 3. Press MENU key to select bright function and set bright function to max. by pressing “+” key on remote control or volume “+” key front panel. Then press MENU key again to select contrast function. And set contrast function to max. by pressing “+” key on remote control or volume “+” key front panel. 4. Entry the item 1 of factory setting to adjust RGB-BLK LEVEL and let R.G.B.-NLK LEVEL are all minimum. 5. Adjust SCREEN VR to let the picture just bright. At this time the screen appears only one color of R or G or B. The BIAS of this color does not do any adjustment. 6. Use CA-100 to measure the color temperature. 7. Adjust the R.G.B. BLACK LEVEL of the other two color to let x=285, y=295. 8. Receive BLACK pattern. And adjust SCREEN VR to let Y=0.45 †0.02FL 9. Receive center white window single. 10. G-Gain fix in 190 to 200 and adjust R-Gain and B-Gain to let x=285 †5, y=295 †5 11. Adjust contrast to let Y=73FL †2FL.

(2) AV MODE

ITEM	ADJUSTMENT PROCEDURE
(1) H-size adjustment (AV mode) (under factory adjustment mode)	1. Set the AV mode (AV1). 2. Receive Lion pattern.  (fig-1) digital test pattern (Lion pattern 3. The item 2 of factory setting is to adjust H-size. 4. Adjust H-Steps to be 5 ±0.5 .
(2) V-size adjustment (AV mode) (under factory adjustment mode)	1. Press INPUT key to select AV1. 2. Receive Lion pattern for AV1. (fig-1) 3. Go to the item 2 of factory setting is to adjust V-size. 4. Adjust V-Steps to be 4 ±0.5 .
(3) Sub-Tint	1. Set the AV Mode(AV1) 2. Receive Color Bar pattern with 8 steps. 3. Connect the scope to Q804 Emitter. 4. Go to the factory setting. Select the Sub-Tint to adjust the Sub-Tint to be as follow.  5. Let the below edge of step 2 and above edge of step 3 at the same level.
(4) SUB Contrast	1. Set the AV Mode (AV1) 2. Receive gray scale pattern with 8 steps. (no color) 3. Connect the scope to Q804 Emitter. 4. Go to the factory setting. Select the Sub-Contract (AV) to adjust the Sub-Contract (AV) to be as follow. 

Total block diagram



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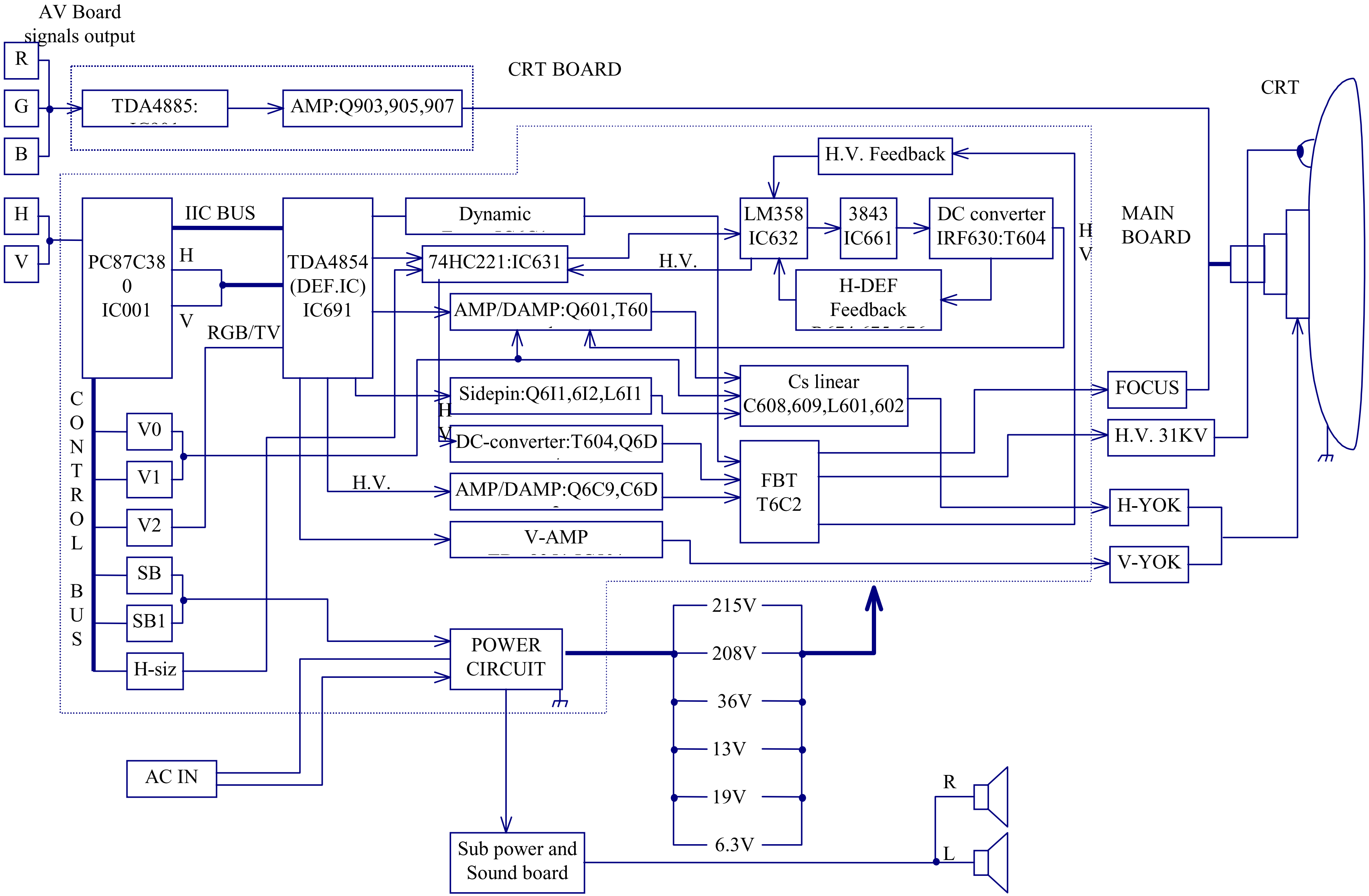
Monitor DEF. & CRT AMP block diagram



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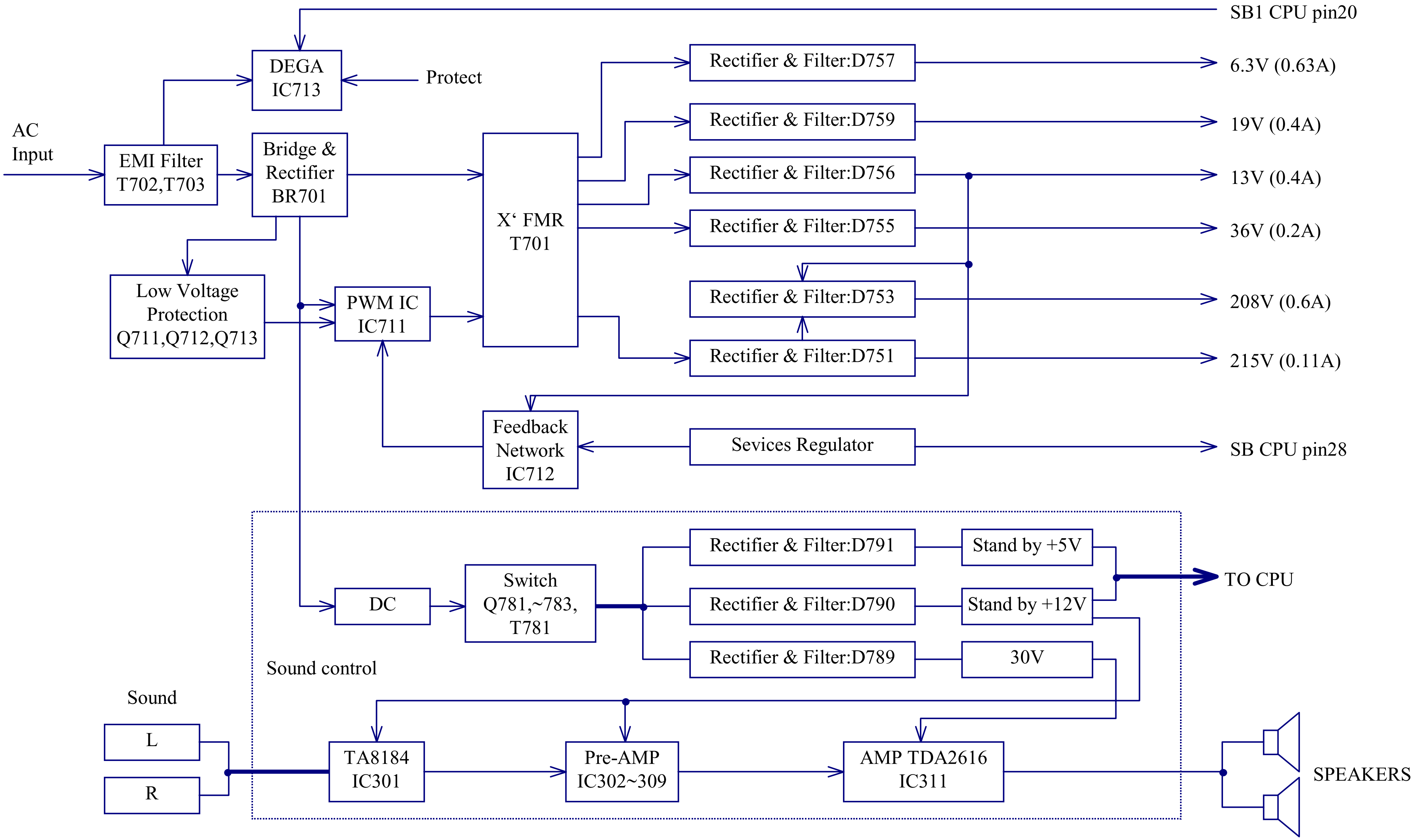
Main power supply & Aux. power & sound AMP block diagram



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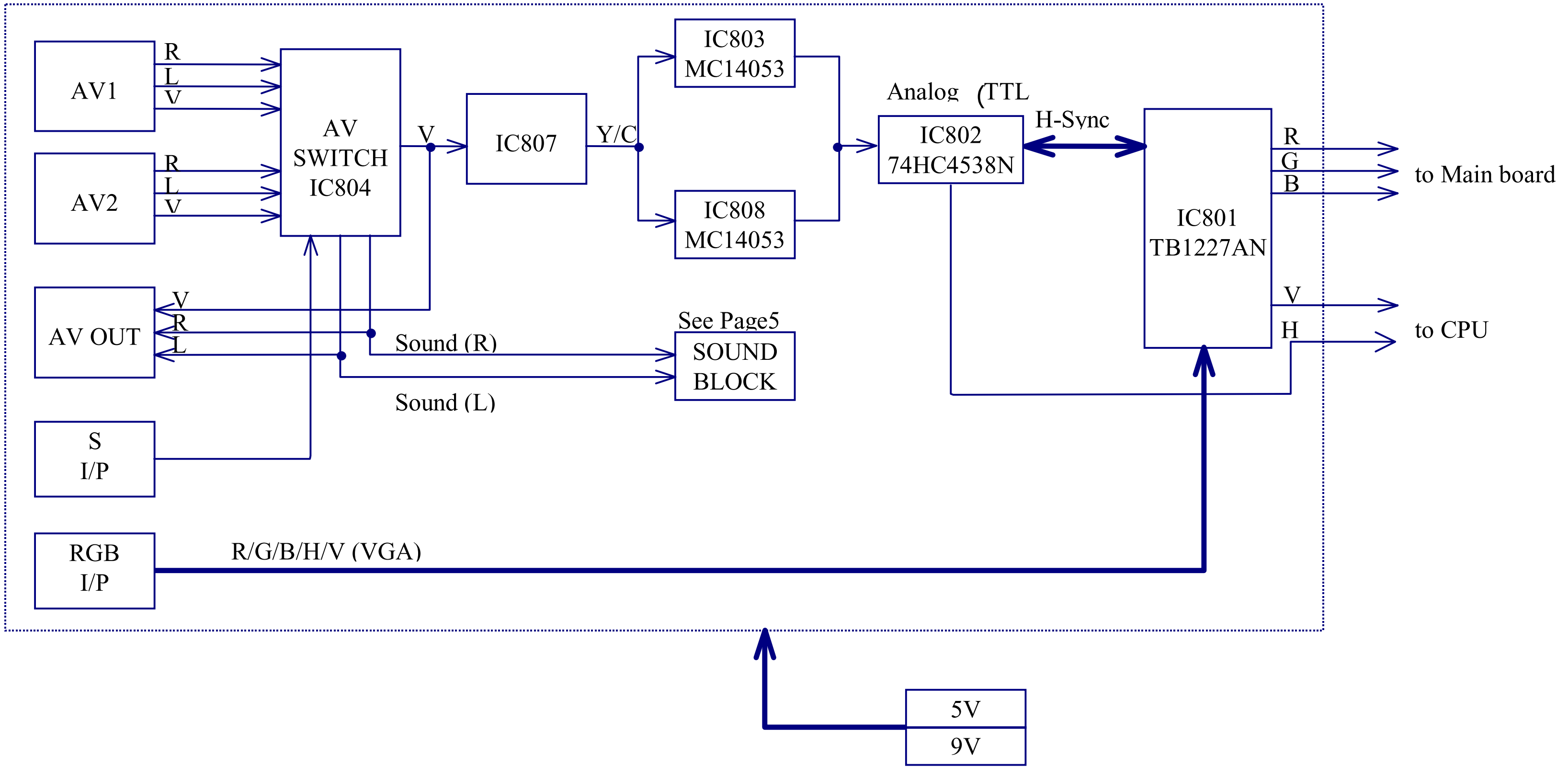
AV. Board



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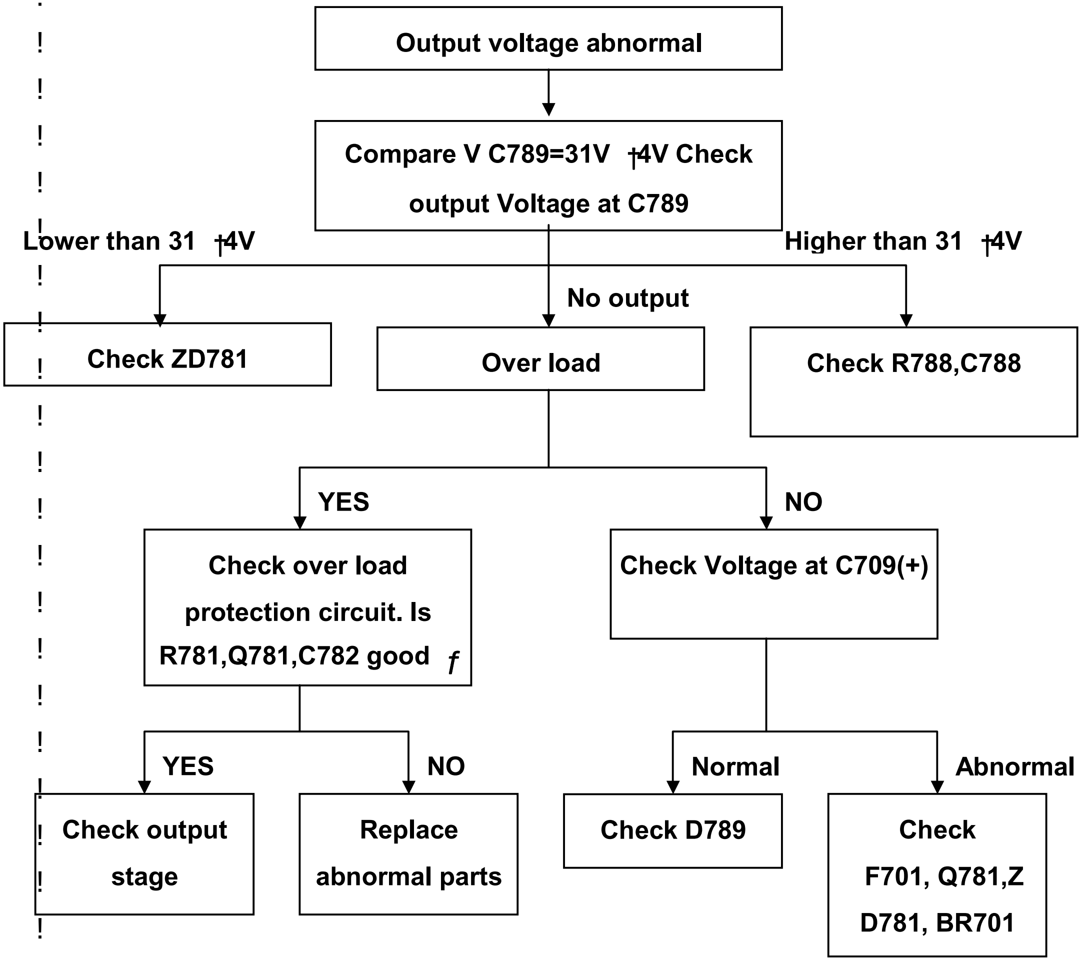
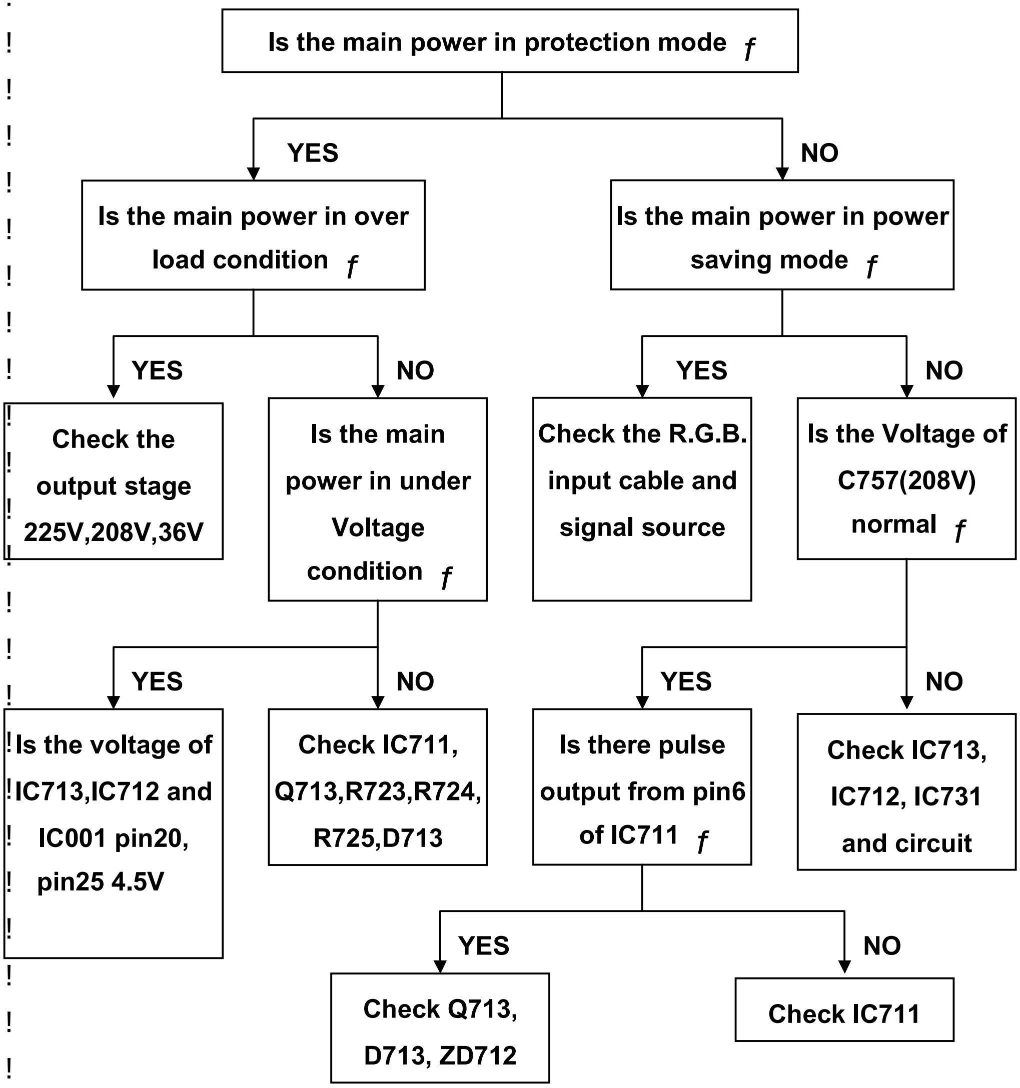
STAND-BY POWER



MAIN POWER

1. NO MAIN POWER

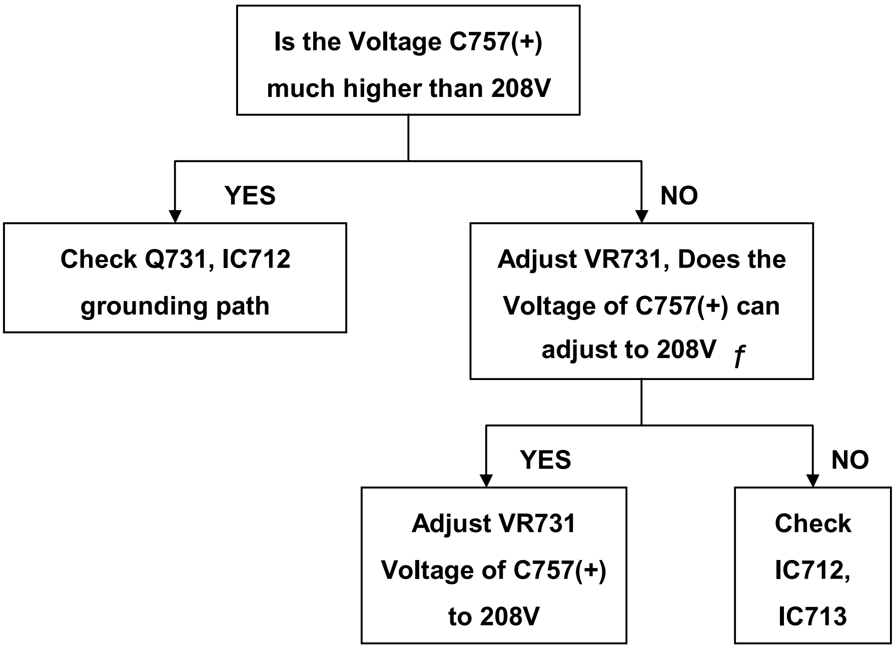

Is the main power in protection mode ƒ
YES
NO
Is the main power in over load condition ƒ
Is the main power in power saving mode ƒ
YES
NO
YES
NO
Check the output stage 225V,208V,36V
Is the main power in under Voltage condition ƒ
Check the R.G.B. input cable and signal source
Is the Voltage of C757(208V) normal ƒ
YES
NO
YES
NO
Is the voltage of IC713,IC712 and IC001 pin20, pin25 4.5V
Check IC711, Q713,R723,R724, R725,D713
Is there pulse output from pin6 of IC711 ƒ
Check IC713, IC712, IC731 and circuit
YES
NO
Check Q713, D713, ZD712
Check IC711

2. POOR LOAD REGULATION

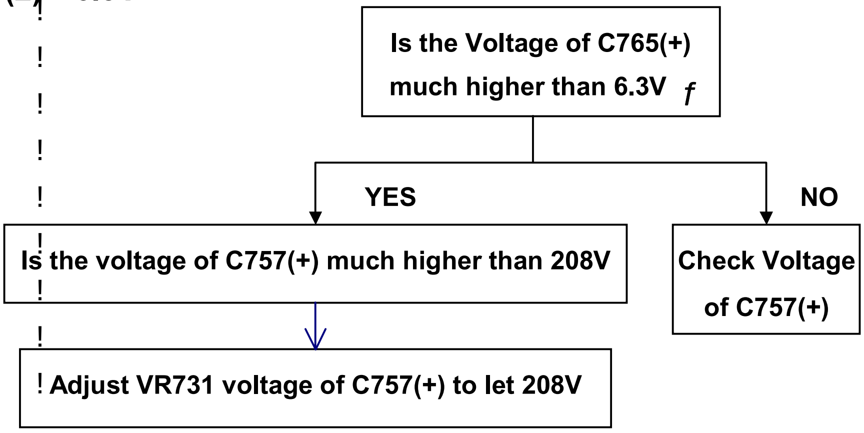
Check 208V VR731, C756

3. OVER VOLTAGE

(1) 160V


Is the Voltage C757(+) much higher than 208V
YES
NO
Check Q731, IC712 grounding path
Adjust VR731, Does the Voltage of C757(+) can adjust to 208V ƒ
YES
NO
Adjust VR731 Voltage of C757(+) to 208V
Check IC712, IC713

(2) 6.3V


Is the Voltage of C765(+) much higher than 6.3V ƒ
YES
NO
Is the voltage of C757(+) much higher than 208V
Check Voltage of C757(+)
Adjust VR731 voltage of C757(+) to let 208V

4. THE VOLTAGE OF HEATER LOWER THAN 5.8V

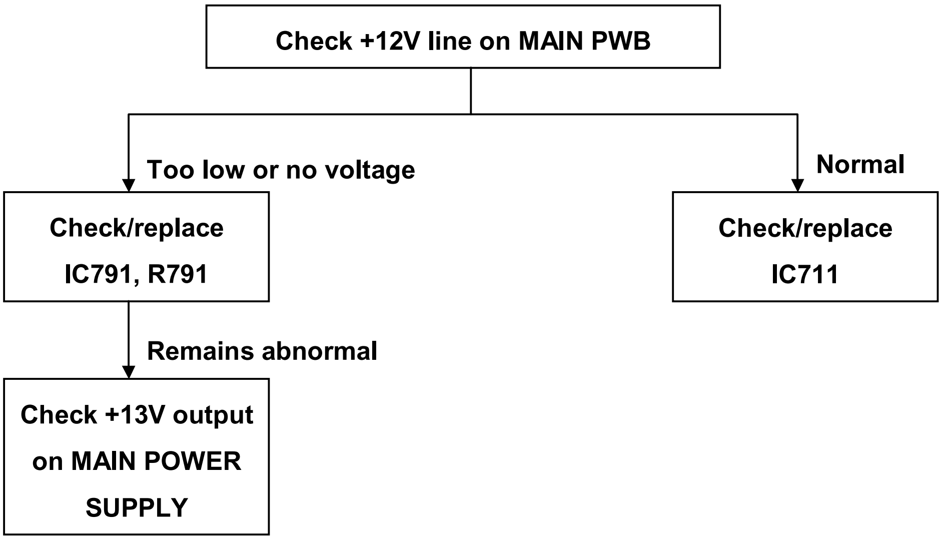
Is the voltage C757(+) much higher than 208V

5. THE PICTURE FROM R.G.B. OUTPUT IS NOT CLEAR

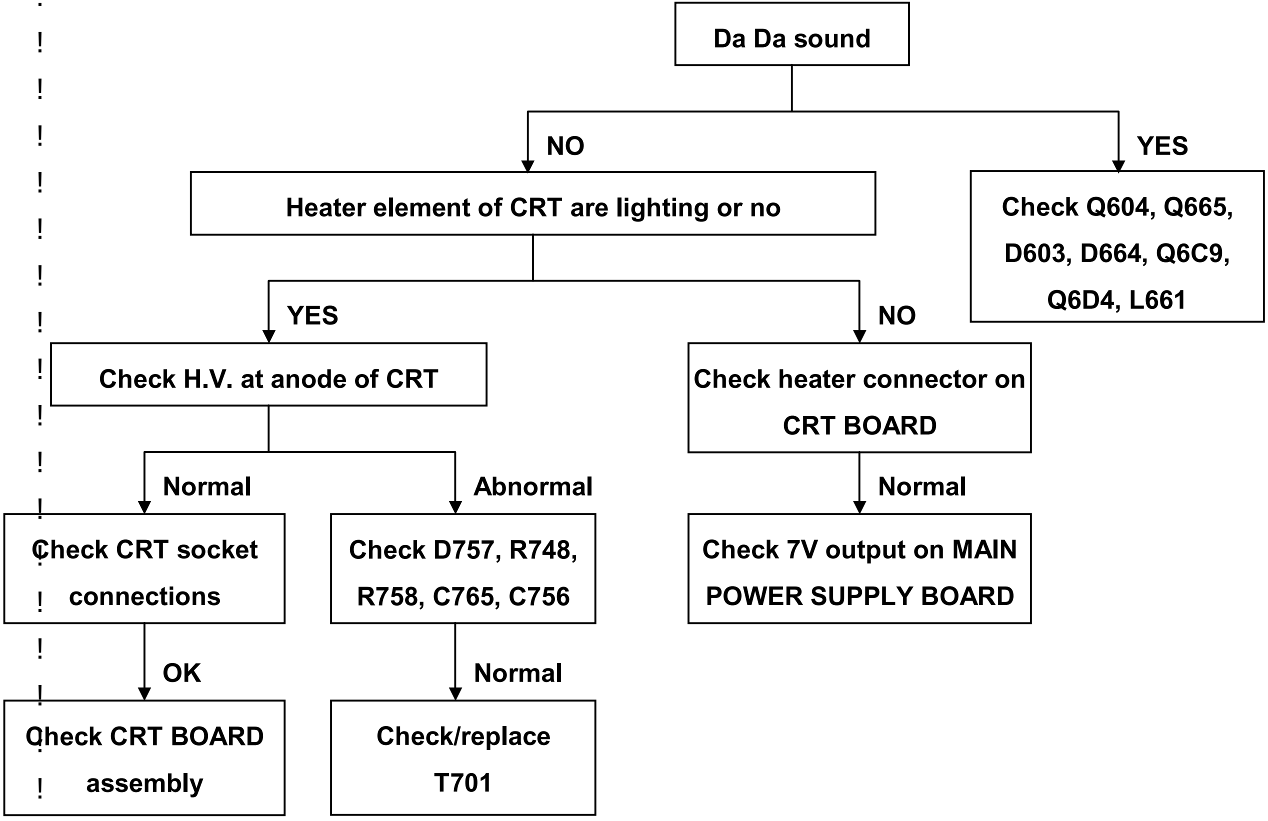
Check +225V and the high voltage 32KV †0.5KV of C753(+), C912, C909

DEF.

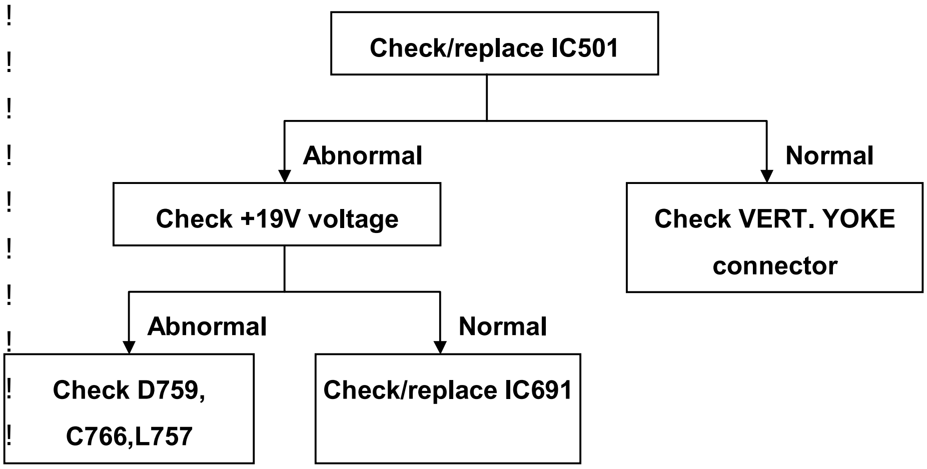
1. NO RASTER(NO SOUND)


Check +12V line on MAIN PWB
Too low or no voltage
Normal
Check/replace IC791, R791
Check/replace IC711
Remains abnormal
Check +13V output on MAIN POWER SUPPLY

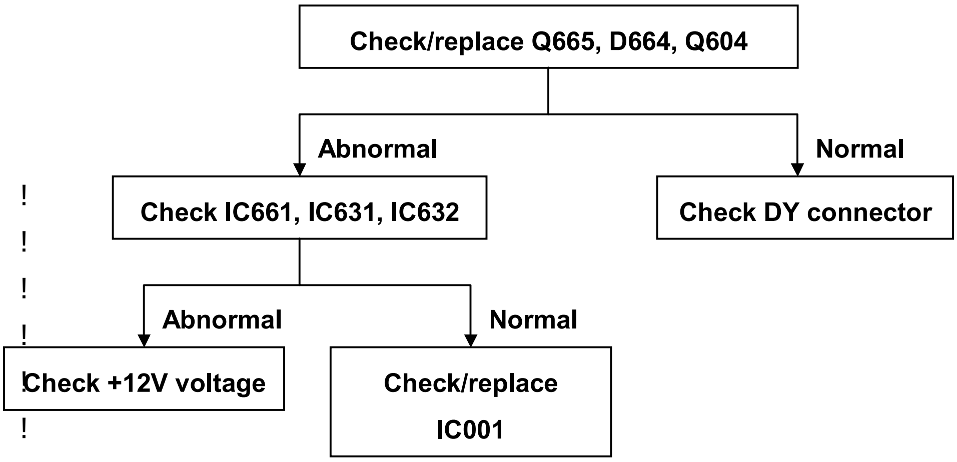
2. NO RASTER(SOUND IS NORMAL)


Da Da sound
NO
YES
Heater element of CRT are lighting or no
Check Q604, Q665, D603, D664, Q6C9, Q6D4, L661
YES
NO
Check H.V. at anode of CRT
Check heater connector on CRT BOARD
Normal
Abnormal
Normal
Check CRT socket connections
Check D757, R748, R758, C765, C756
Check 7V output on MAIN POWER SUPPLY BOARD
OK
Normal
Check CRT BOARD assembly
Check/replace T701

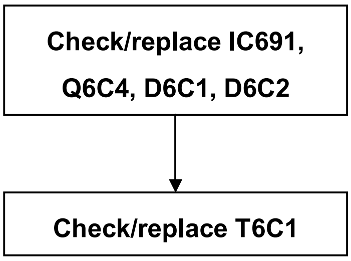
3. ONE HORIZONTAL LINE RASTER (NO VERTICAL SCAN)



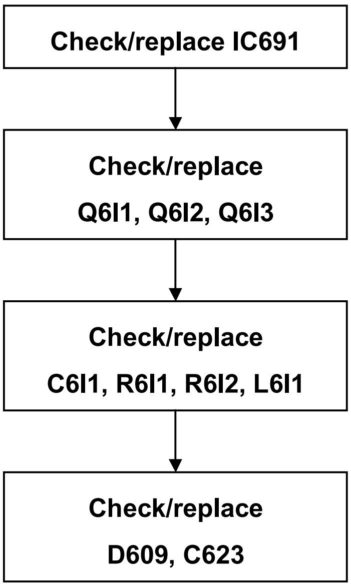
4. ONE VERTICAL LINE RASTER (NO HORIZONTAL SCAN)



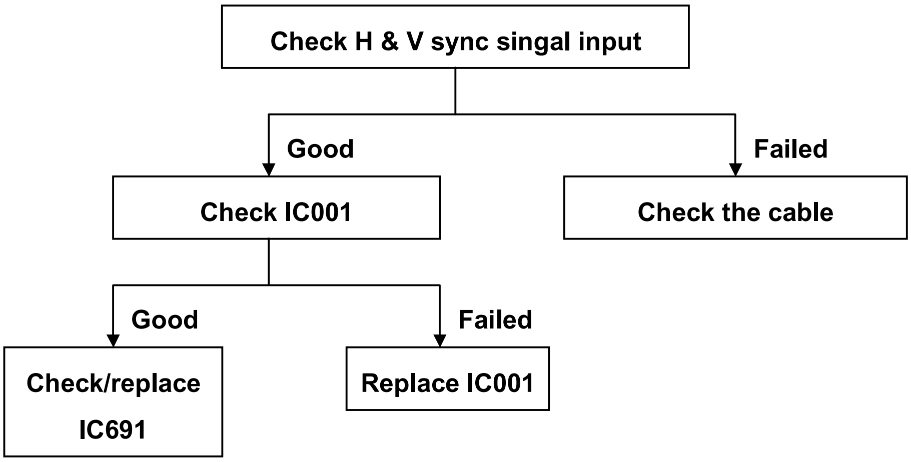
5. ABNORMAL CORNER FOCUS (ABNORMAL DYNAMIC FOCUS)



6. RASTER DISTORTION (SIDE PIN DISTORTION)

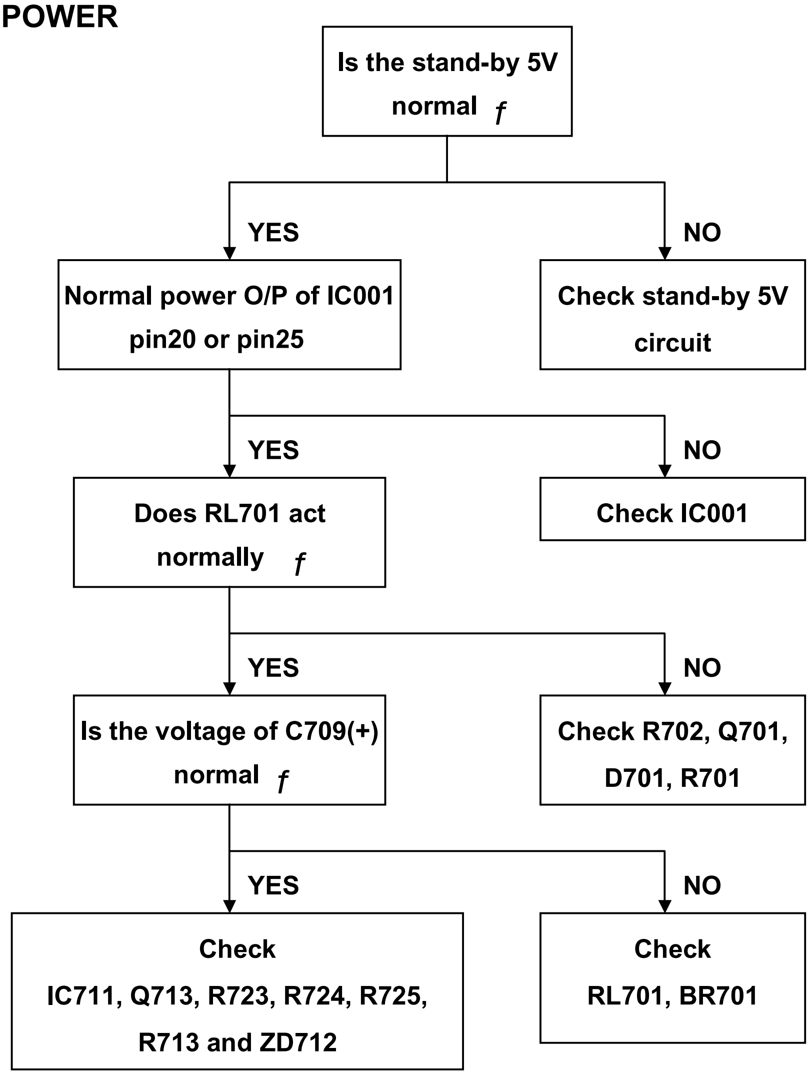


7. OUT OF HORIZONTAL/VERTICAL SYNC.

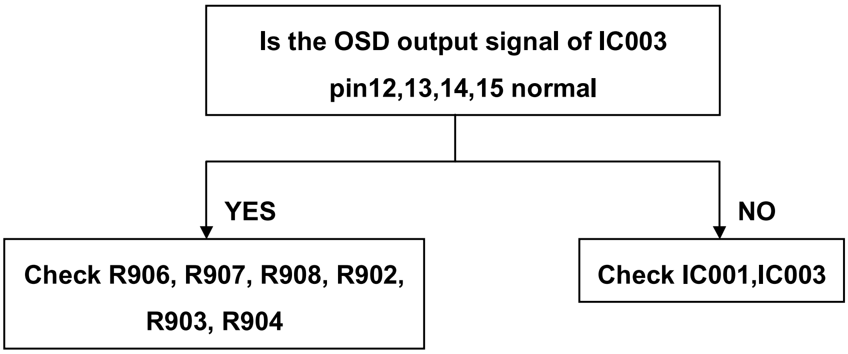


VIDEO

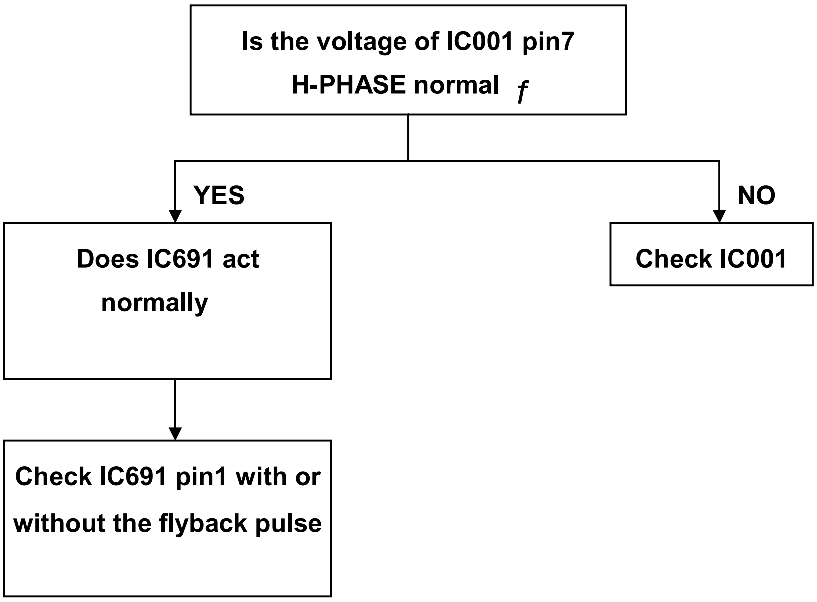
1. NO POWER


Is the stand-by 5V normal ƒ
YES
NO
Normal power O/P of IC001 pin20 or pin25
Check stand-by 5V circuit
YES
NO
Does RL701 act normally ƒ
Check IC001
YES
NO
Is the voltage of C709(+) normal ƒ
Check R702, Q701, D701, R701
YES
NO
Check IC711, Q713, R723, R724, R725, R713 and ZD712
Check RL701, BR701

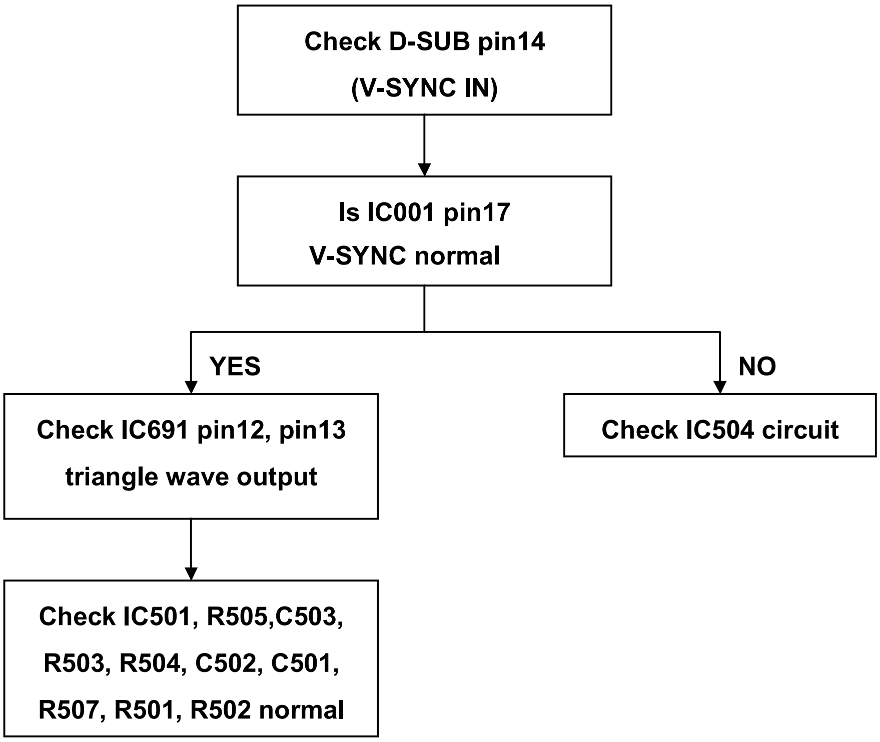
2. NO OSD (On Screen Display)


Is the OSD output signal of IC003 pin12,13,14,15 normal
YES
NO
Check R906, R907, R908, R902, R903, R904
Check IC001,IC003

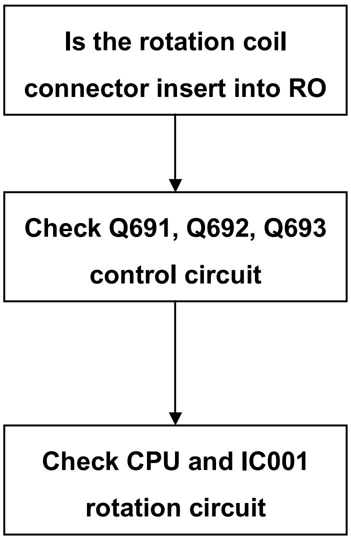
3. H-PHASE CAN NOT BE ADJUSTED.


Is the voltage of IC001 pin7
H-PHASE normal f
YES
NO
Does IC691 act normally
Check IC001
Check IC691 pin1 with or without the flyback pulse

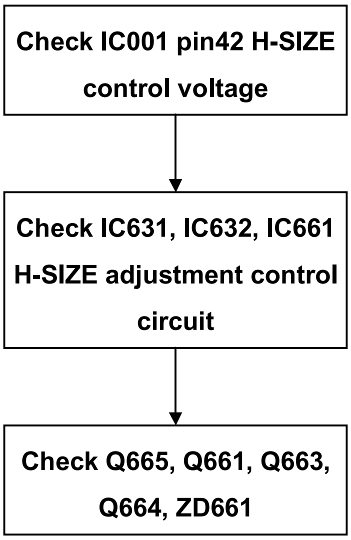
4. OUT OF VERT SYNCHRONIZATION IN RGB MODE.


Check D-SUB pin14
(V-SYNC IN)
Is IC001 pin17
V-SYNC normal
YES
NO
Check IC691 pin12, pin13 triangle wave output
Check IC504 circuit
Check IC501, R505,C503, R503, R504, C502, C501, R507, R501, R502 normal

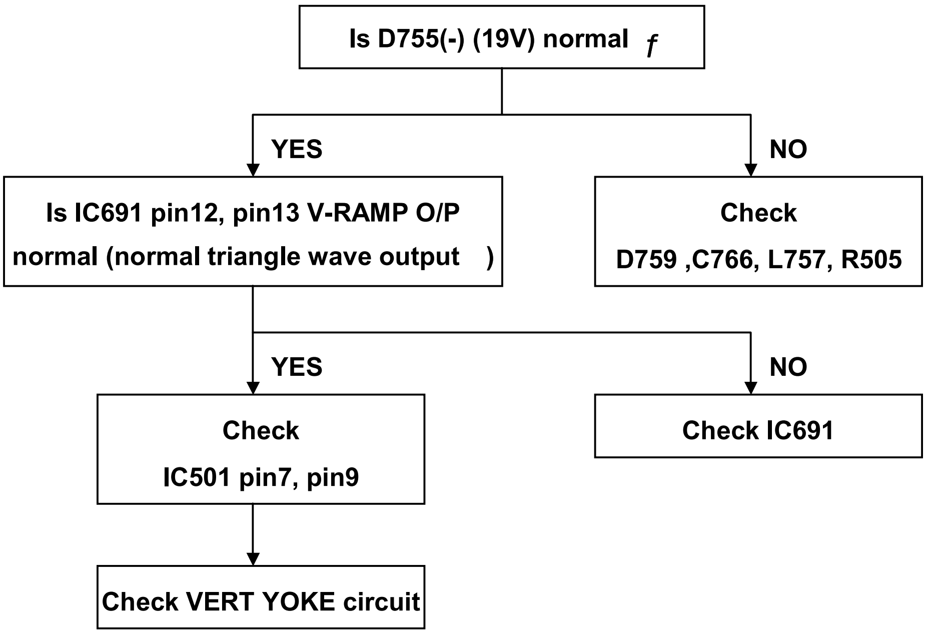
5. NO ROTATION FUNCTION


Is the rotation coil connector insert into RO
Check Q691, Q692, Q693 control circuit
Check CPU and IC001 rotation circuit

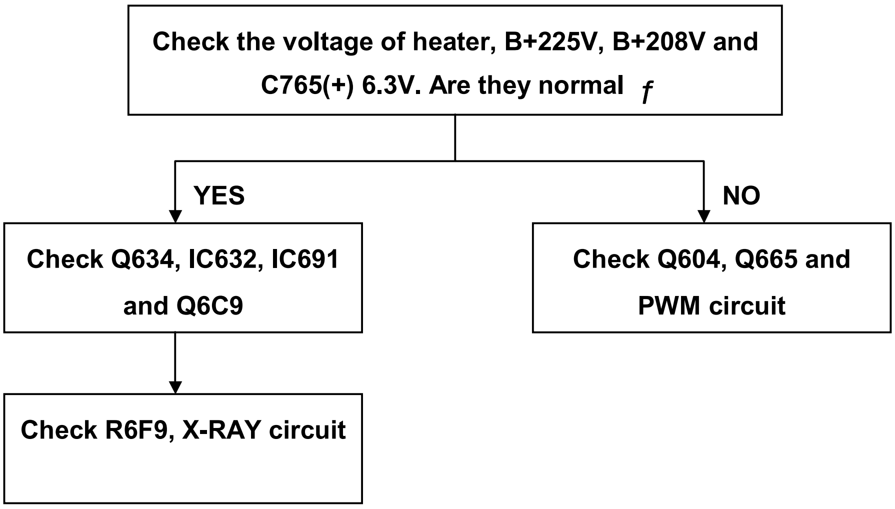
6. H-SIZE CAN NOT BE ADJUSTED


Check IC001 pin42 H-SIZE control voltage
Check IC631, IC632, IC661 H-SIZE adjustment control circuit
Check Q665, Q661, Q663, Q664, ZD661

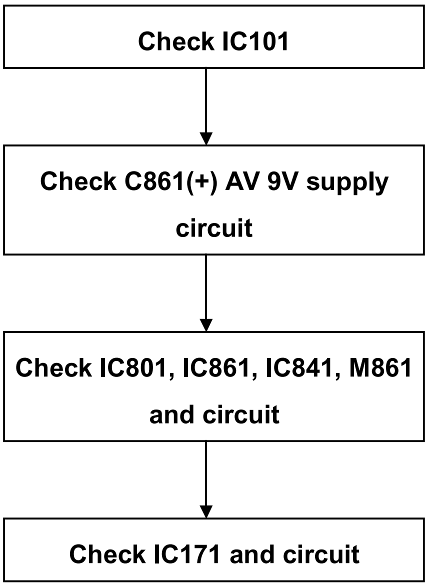
7. NO VERTICAL SCAN


Is D755(-) (19V) normal ƒ
YES
NO
Is IC691 pin12, pin13 V-RAMP O/P normal (normal triangle wave output)
Check D759 ,C766, L757, R505
YES
NO
Check IC501 pin7, pin9
Check IC691
Check VERT YOKE circuit

8. NO PICTURE

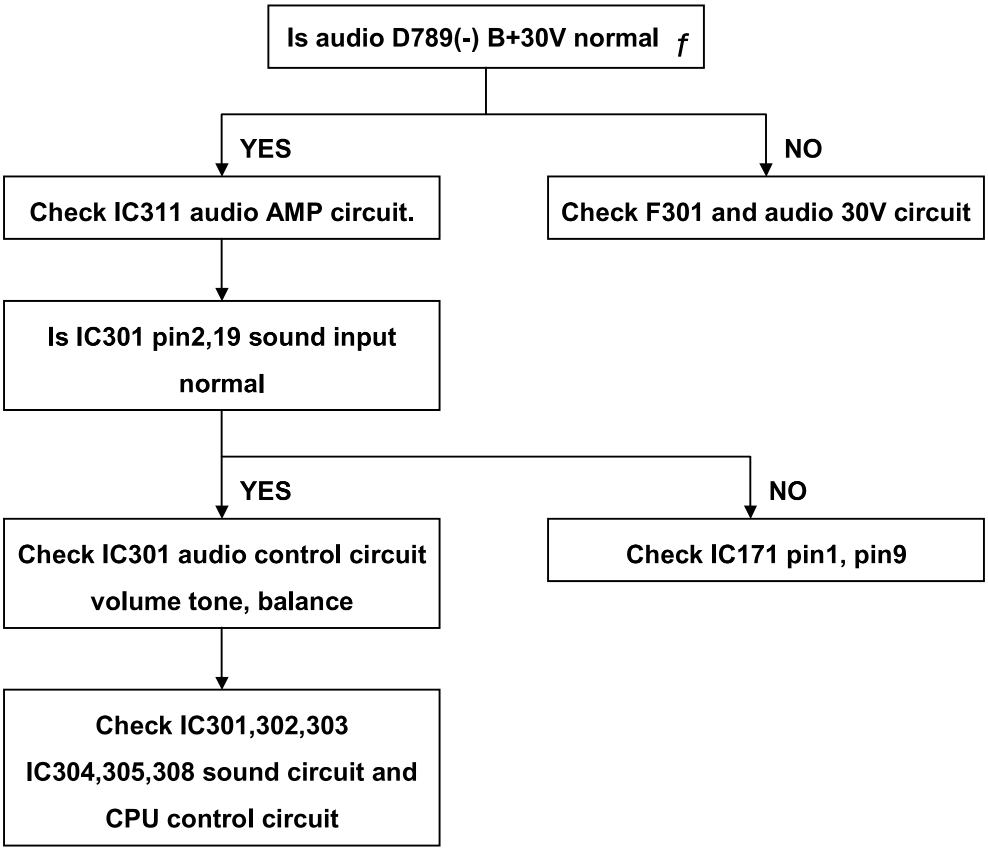

Check the voltage of heater, B+225V, B+208V and C765(+) 6.3V. Are they normal ƒ
YES
NO
Check Q634, IC632, IC691 and Q6C9
Check Q604, Q665 and PWM circuit
Check R6F9, X-RAY circuit

9. NO VIDEO IN AV INPUT MODE


Check IC101
Check C861(+) AV 9V supply circuit
Check IC801, IC861, IC841, M861 and circuit
Check IC171 and circuit

AUDIO

1. NO AUDIO OUTPUT


Is audio D789(-) B+30V normal f
YES
NO
Check IC311 audio AMP circuit.
Check F301 and audio 30V circuit
Is IC301 pin2,19 sound input normal
YES
NO
Check IC301 audio control circuit volume tone, balance
Check IC171 pin1, pin9
Check IC301,302,303 IC304,305,308 sound circuit and CPU control circuit

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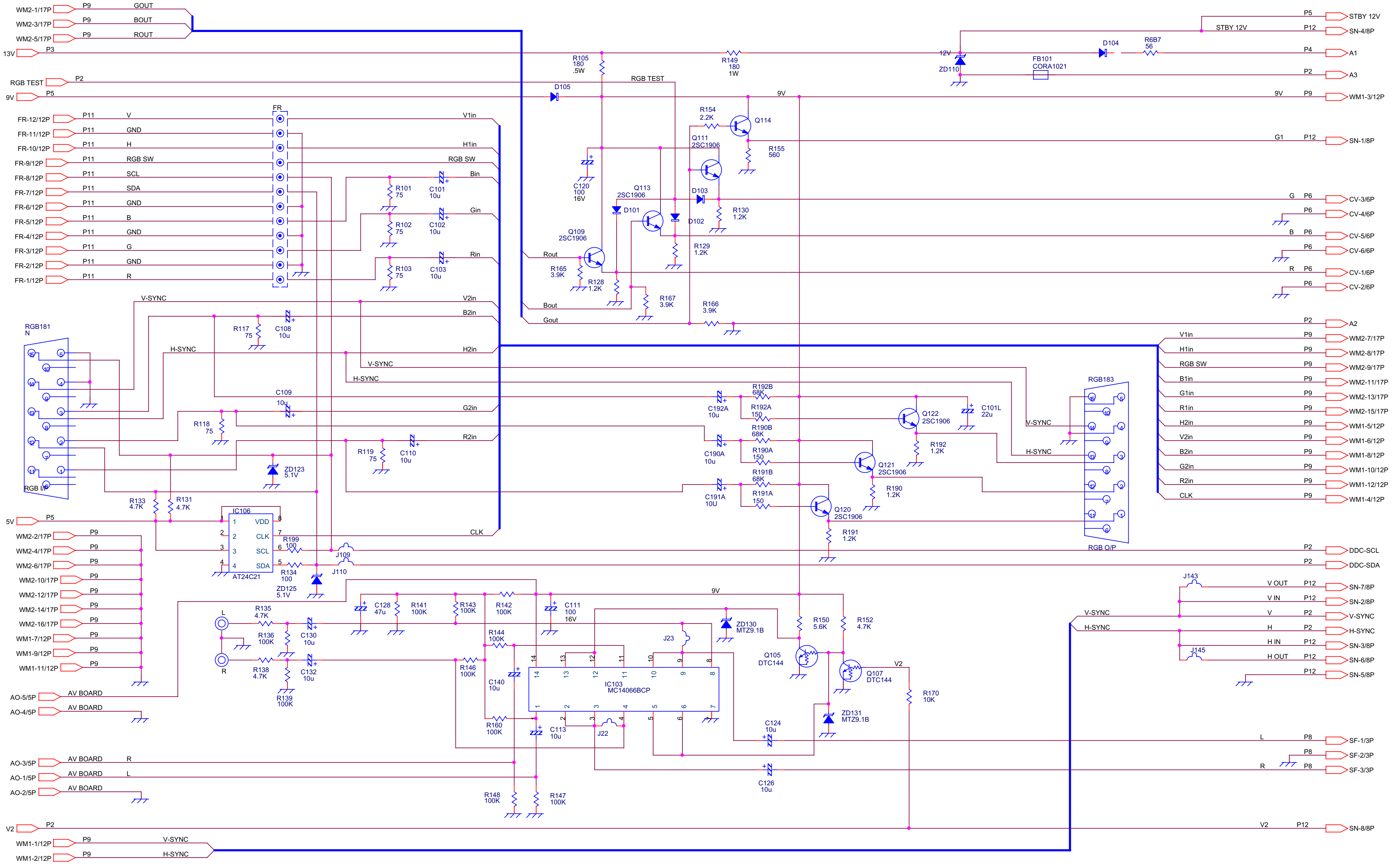

represent the critical component.

PAGE 1
SAMPO CO. ELECTRONIC RD2 (RGB.SCH)
SME-23DL3

Size	Document Number	Rev
C	MONITOR RGB	0

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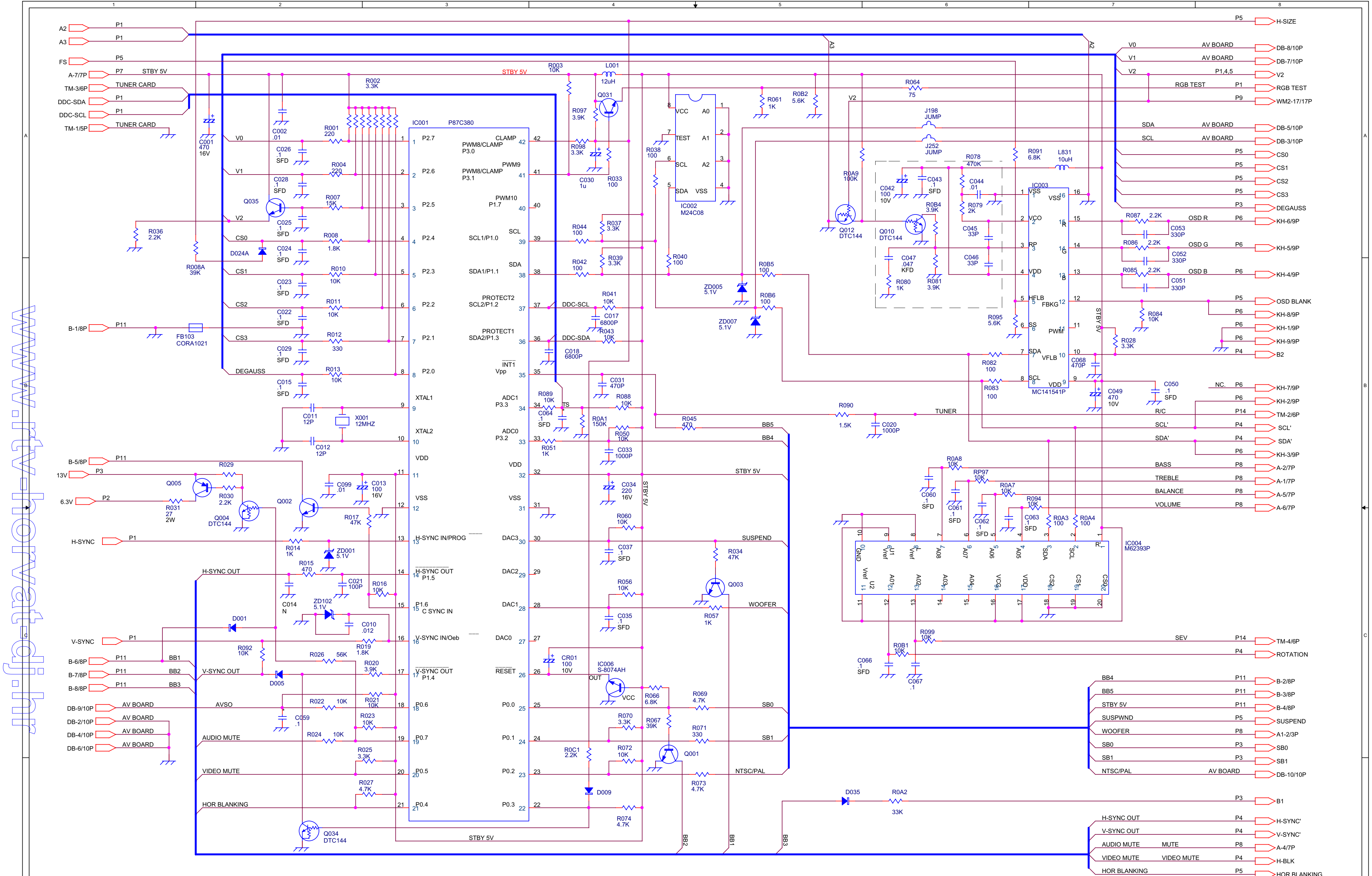

	V0	V1	V2	CS0	CS1	CS2	CS3
TV	0	0	1	0	0	0	0
AV1	0	1	1	0	0	0	0
AV2	1	0	1	0	0	0	0
VGA							
31K	1	1	0	0	0	0	0
35K	1	1	0	1	0	0	0
38K	1	1	0	1	1	0	0
48K	1	1	01	11	11	10	1

	SB0	SB1
POWER ON	1	1
POWER SAVING	0	1
OFF	0	0

	TS
W/O TUNER	5V
NTSC	2.5V
PAL	0V
SECAM	0V

	AVSO
W/O AV	1
W/ AV	0

PAGE 2

SAMPO CO. ELECTRONIC RD2 (CPU.SCH)

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C	CPU	0

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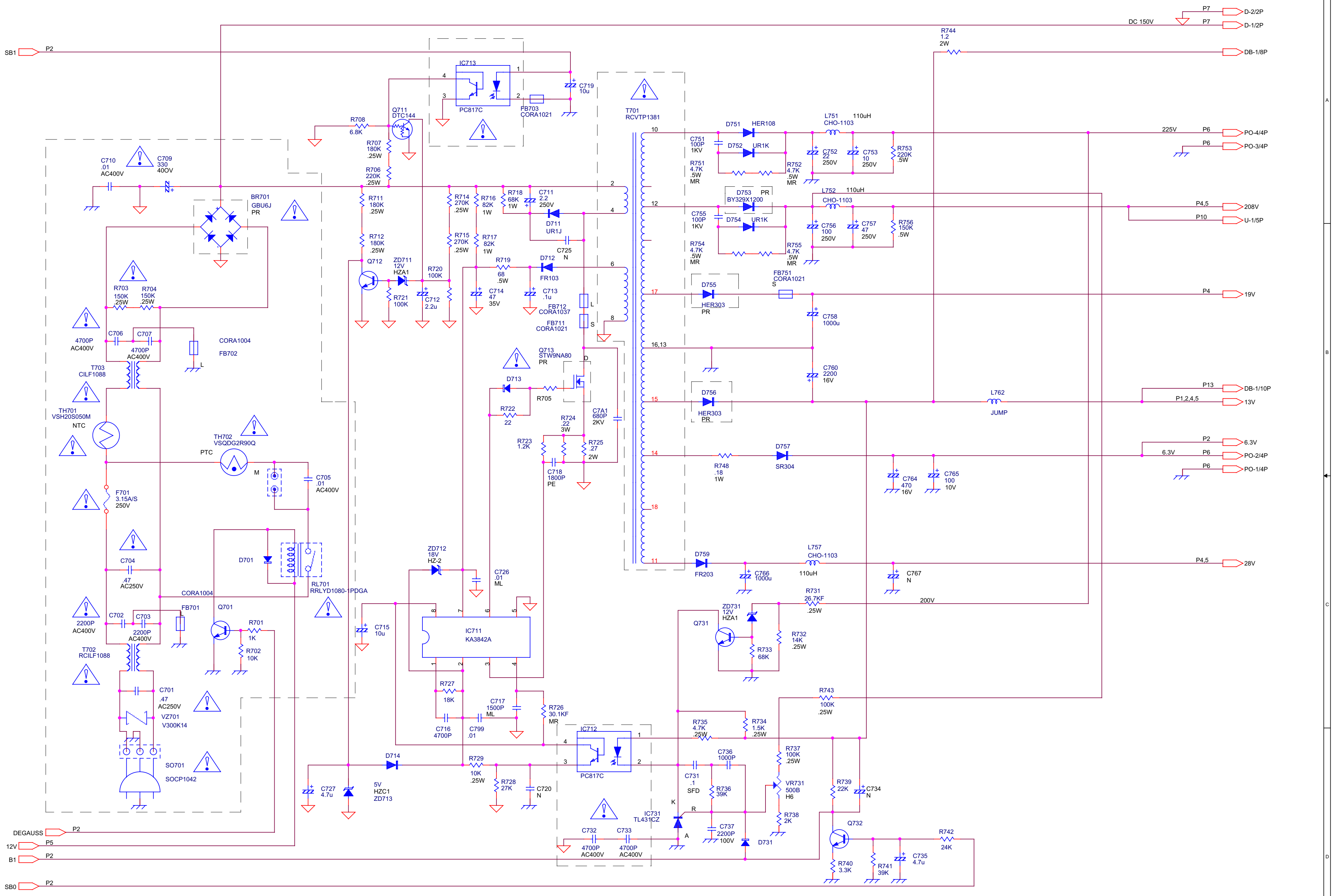

PAGE 3

SAMPO CO. ELECTRONIC RD2 (POWER1.SCH)

SME-23DL3

Size	Document Number	Rev
C	MAIN POWER	0

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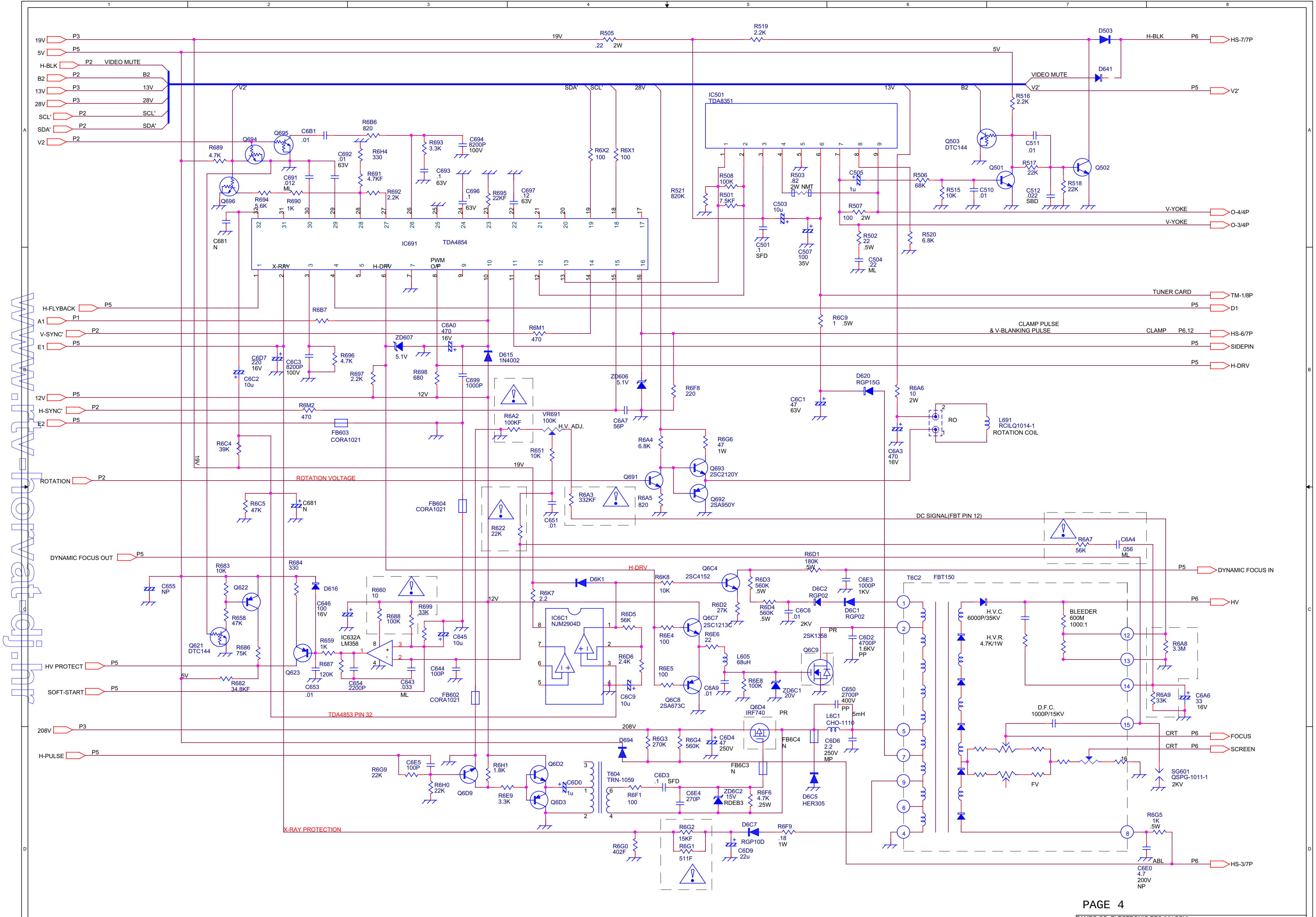

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SAMPO CO. ELECTRONIC RD2 (HV.SCH)		
SME-23DL3		
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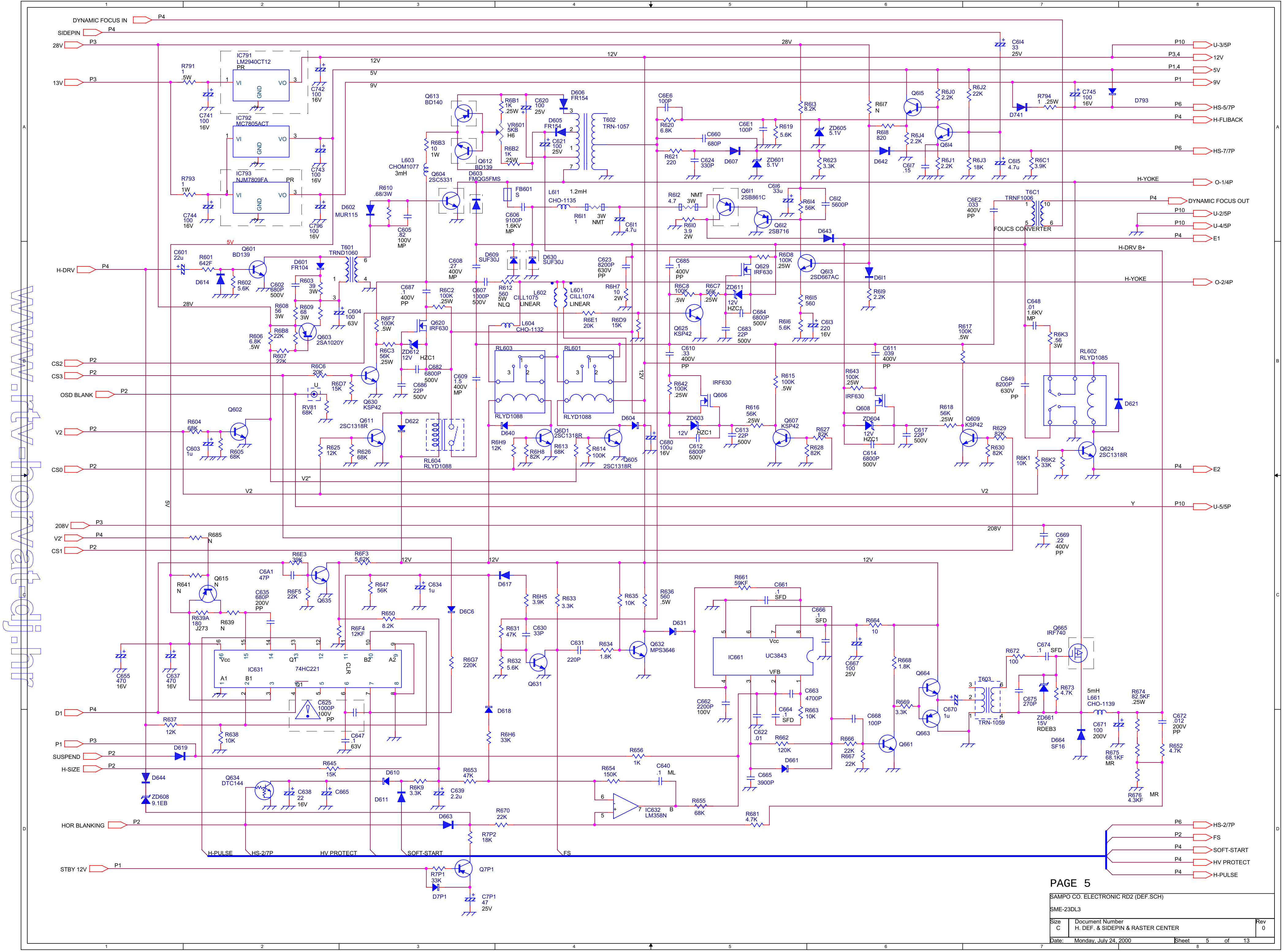

PAGE 5

SAMPO CO. ELECTRONIC RD2 (DEF.SCH)

SME-23DL3

Size	Document Number	Rev
C	H. DEF. & SIDEPIN & RASTER CENTER	0

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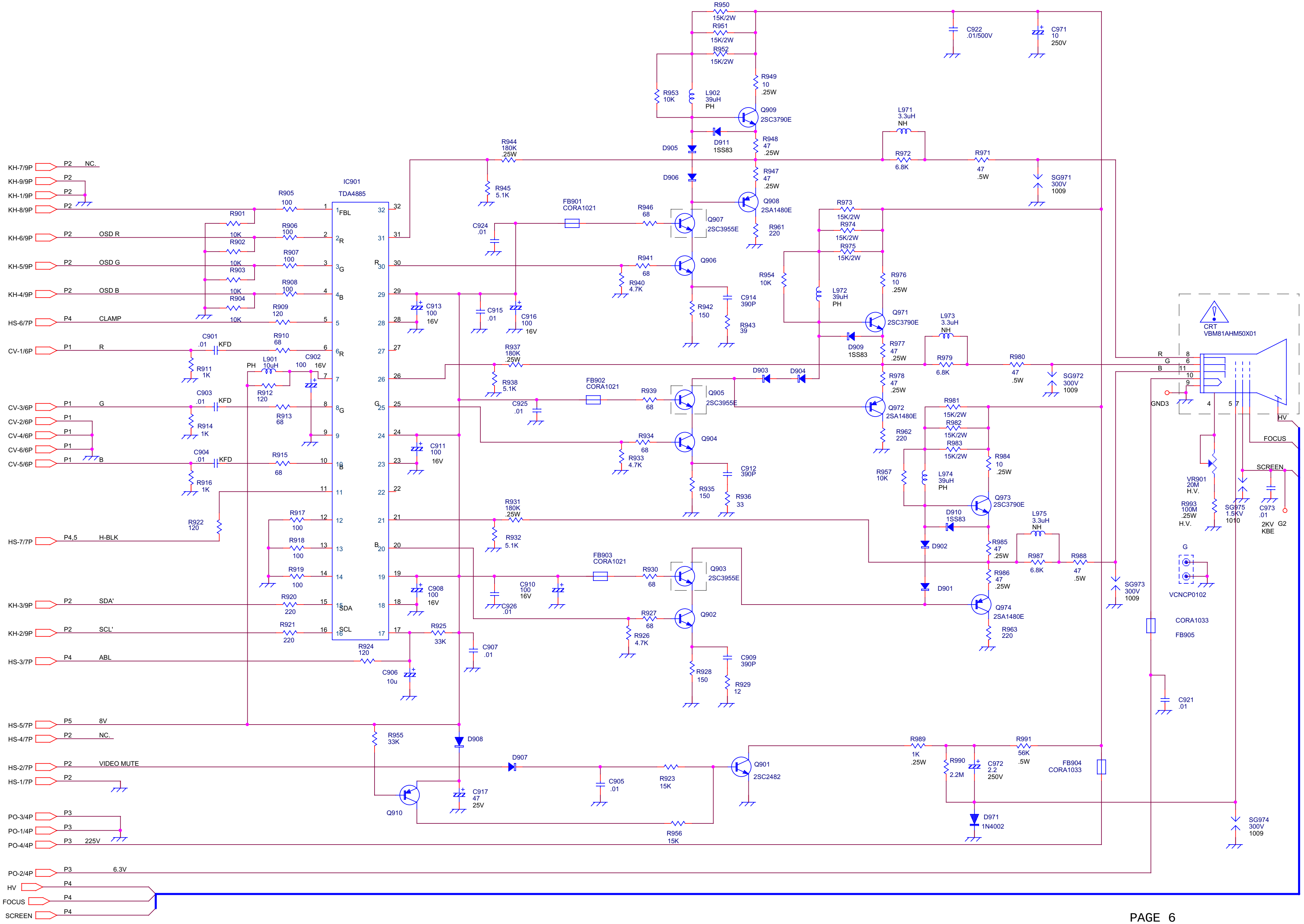

PAGE 6

SAMPO CO. ELECTRONIC R&D2 (CRT.SCH)

SME-23DL3

Size	Document Number	Rev
C	CRT PWB	0

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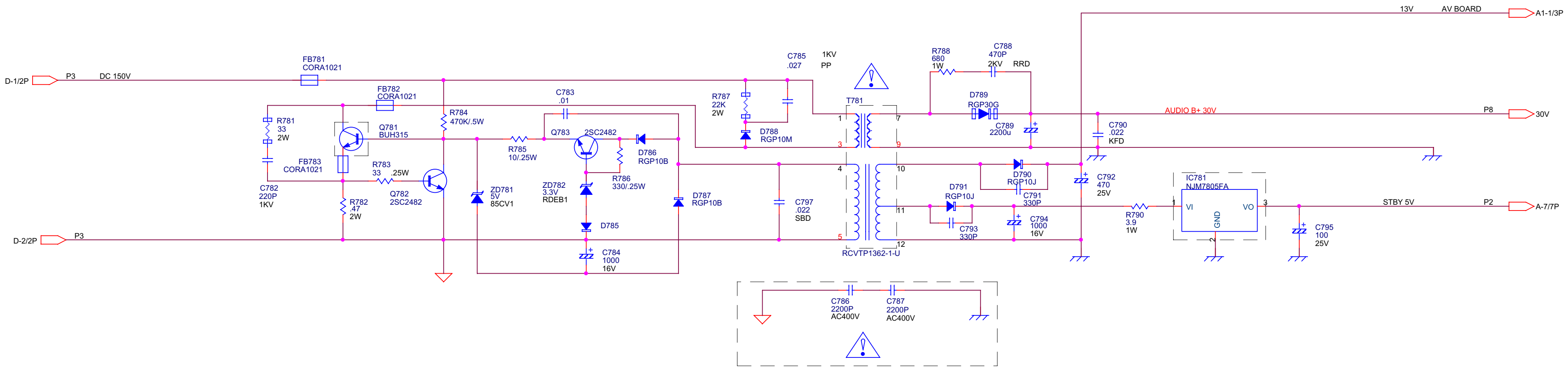

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SAMPO CO. ELECTRONIC RD2 (POWER2.SCH)

SME-23DL3

Size	Document Number	Rev
C	SUBPOWER	0

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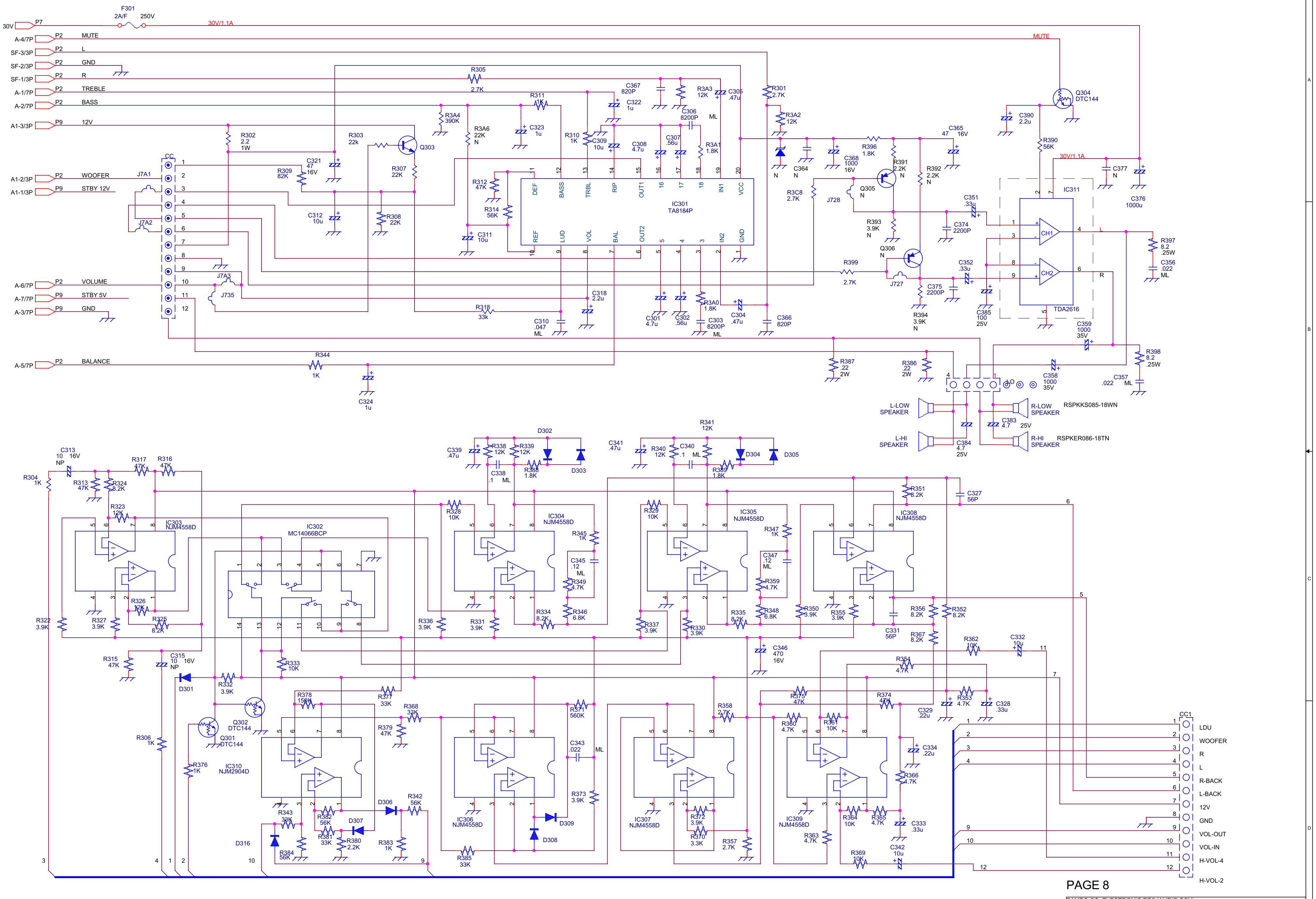

SAMPO CO. ELECTRONIC RD2 (AUDIO.SCH)

SME-23DL3

Size	Document Number	Rev
C	AUDIO	0

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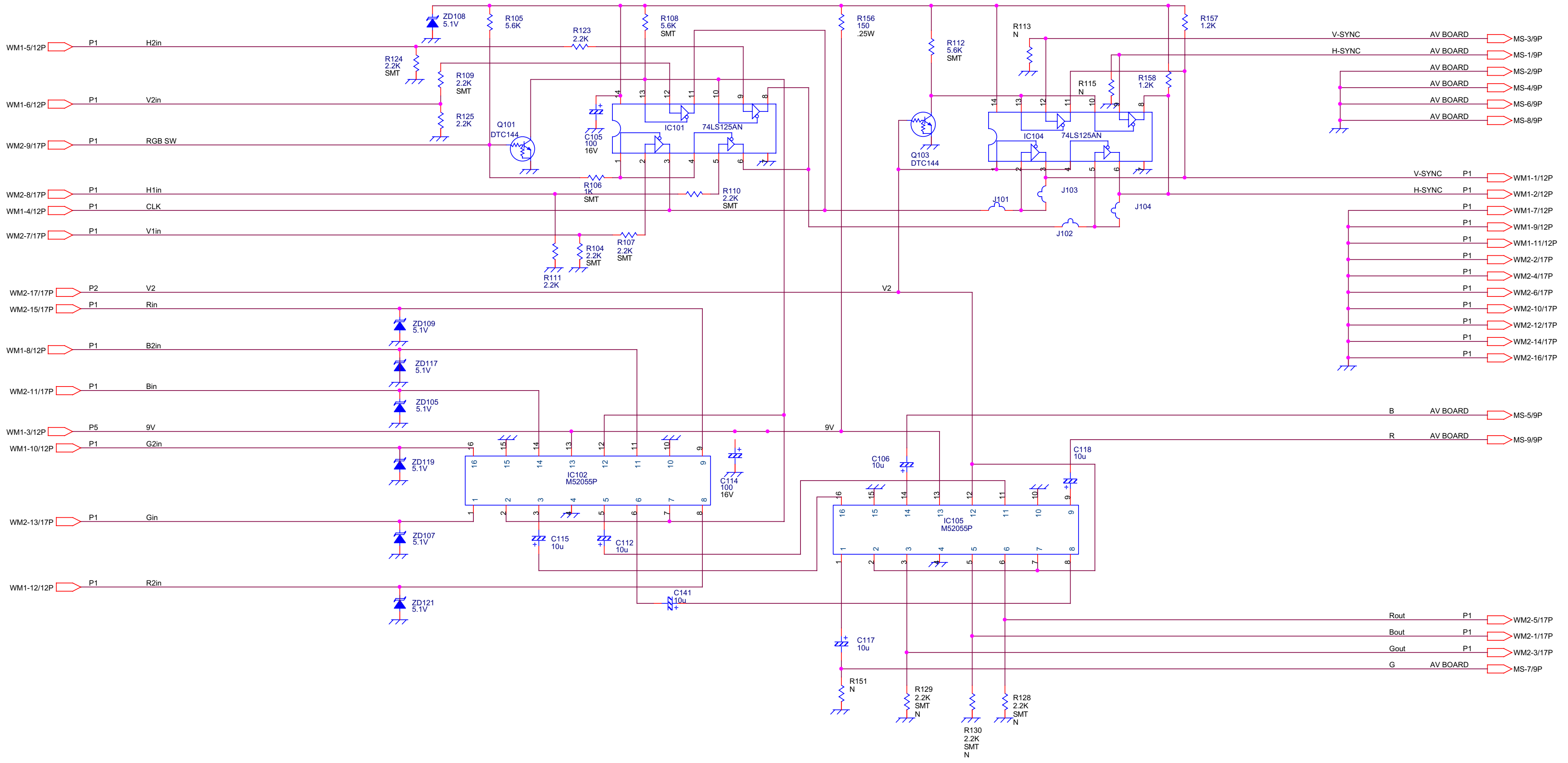

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SAMPO CO. ELECTRONIC RD2 (I-O.SCH)

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C	RGB I/O	0

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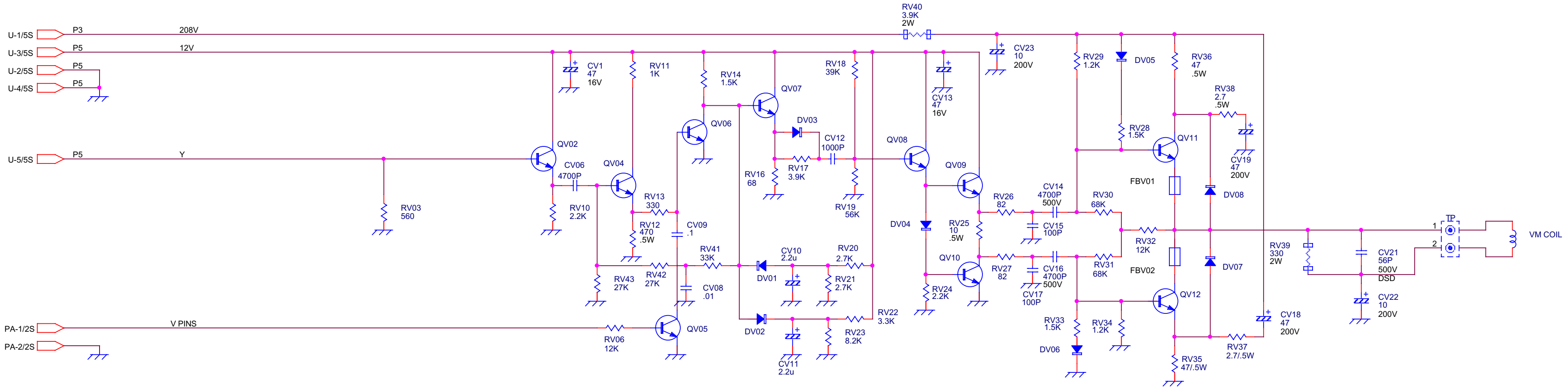

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SAMPO CO. ELECTRONIC RD2 (VM.SCH)

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C	VM	0

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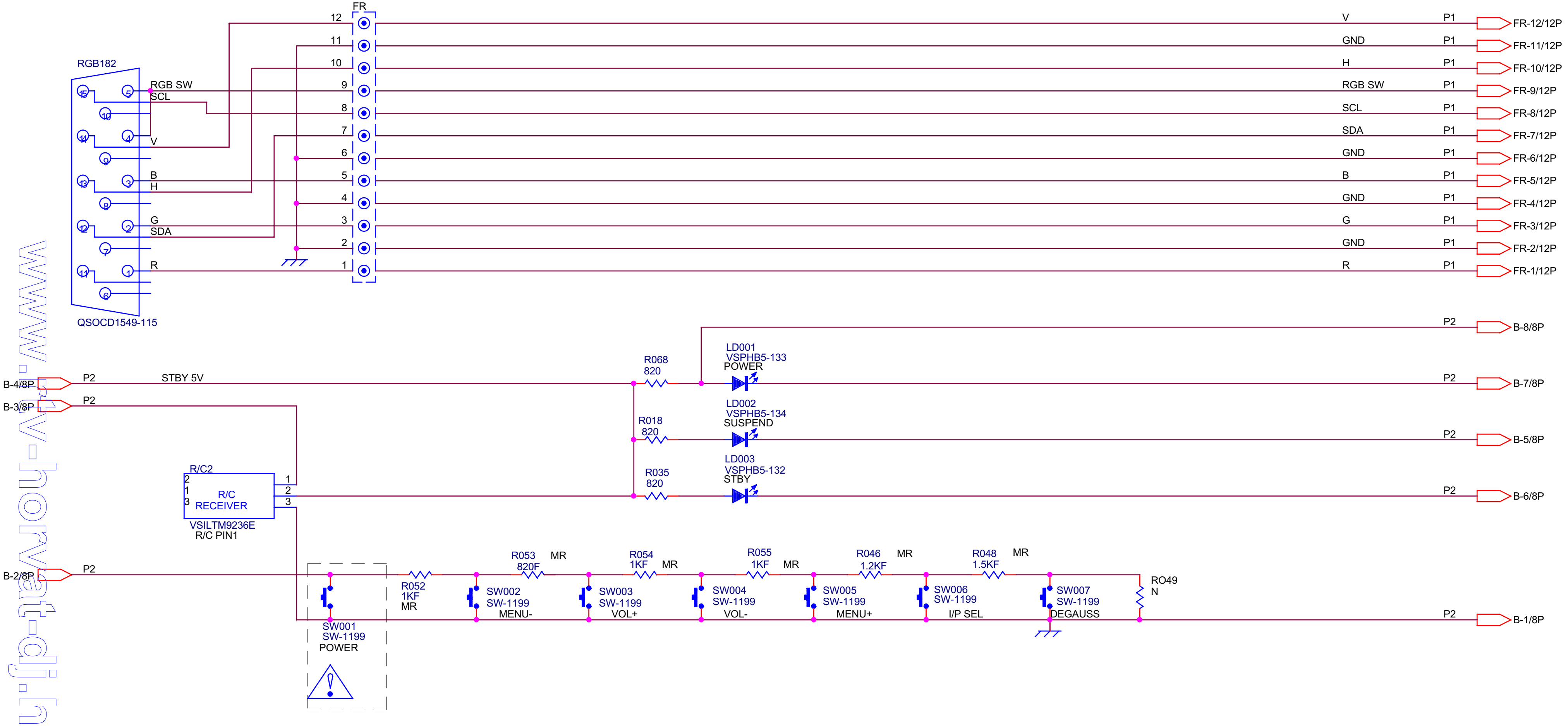

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SAMPO CO. ELECTRONIC RD2 (LED.SCH)

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B	LED	0

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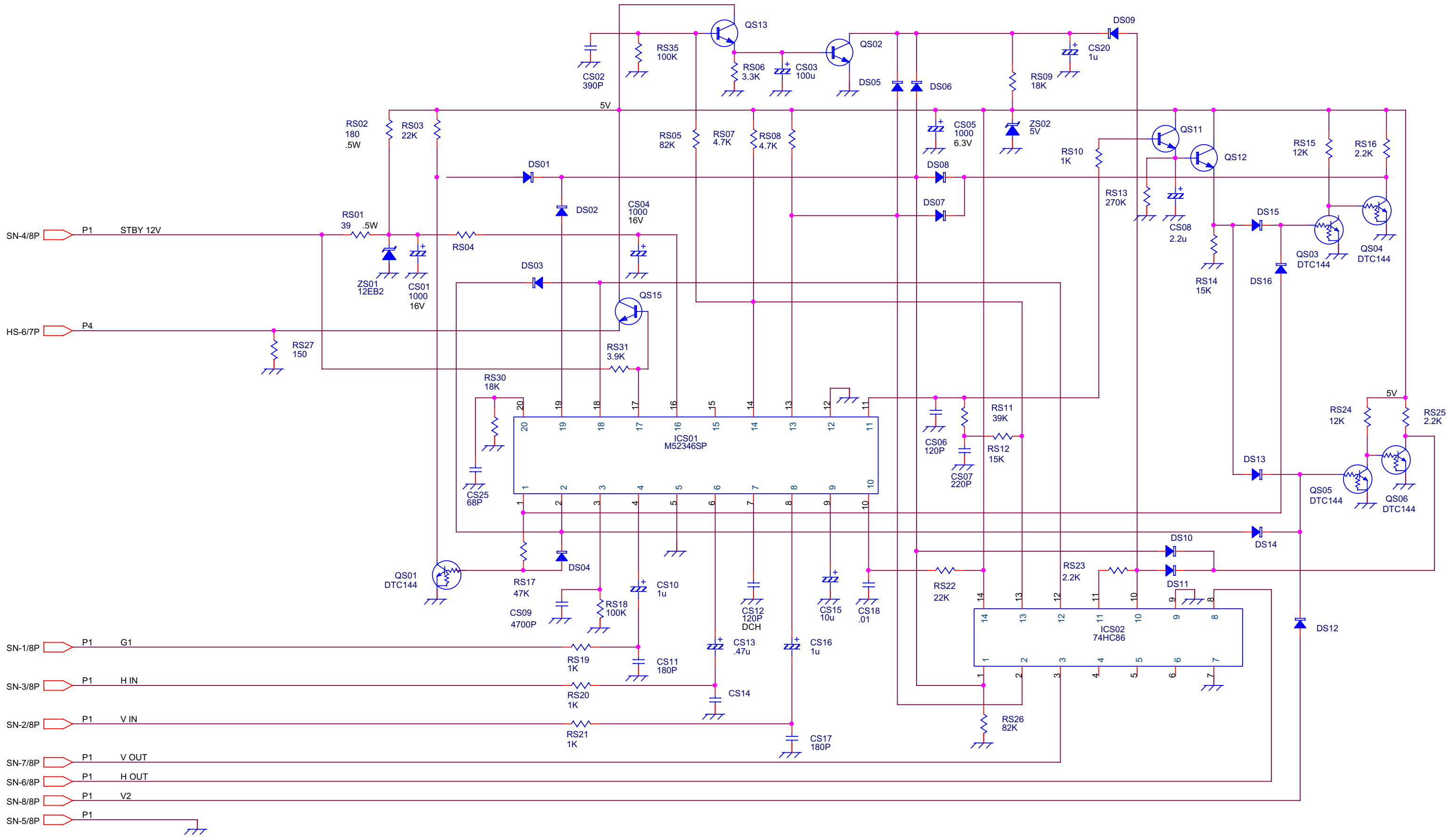

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SAMPO CO. ELECTRONIC RD2 (SYNC.SCH)

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C	SYNC ON GREEN	0

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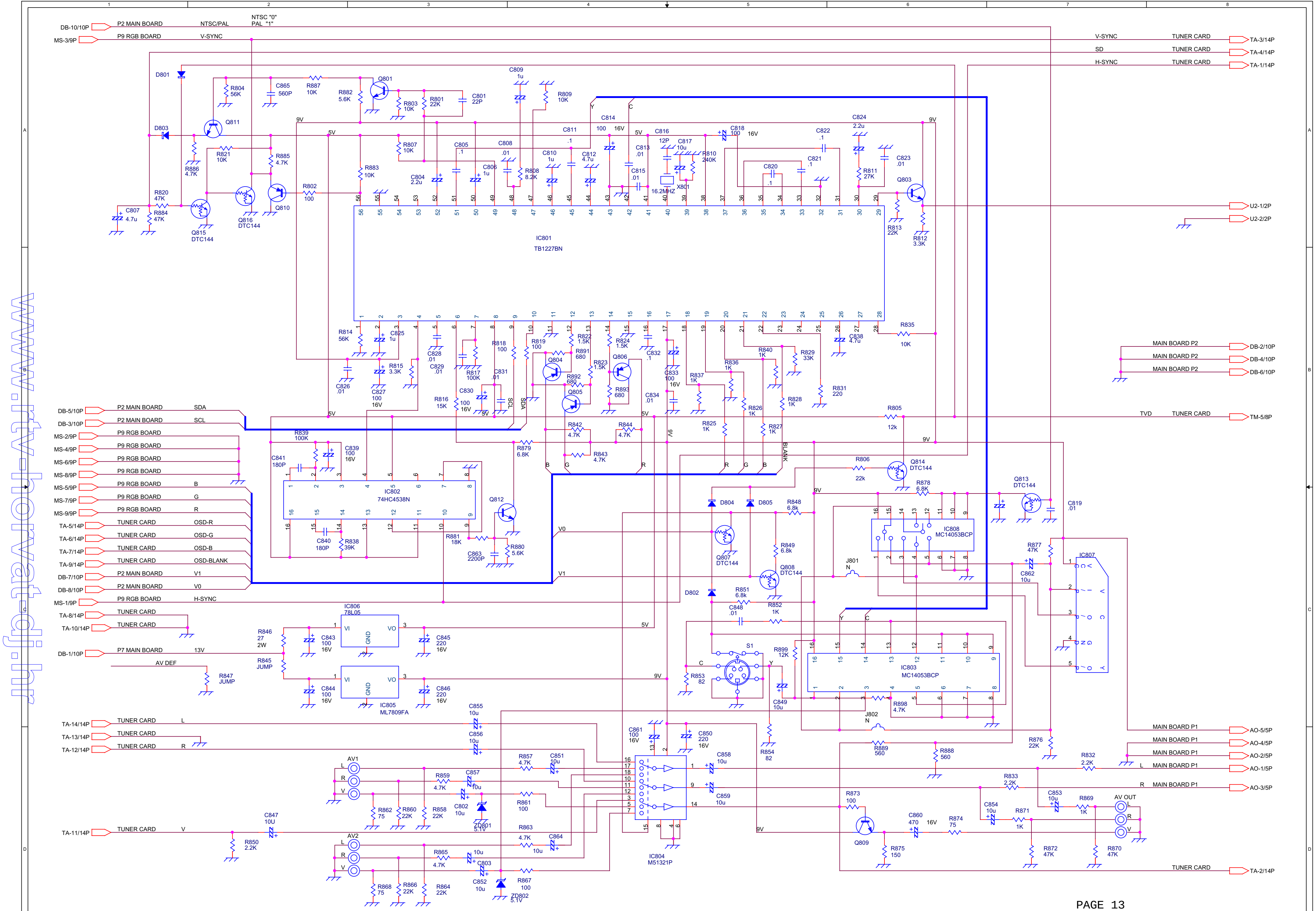

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SAMPO CO.ELECTRONIC RD2 (AV.SCH)		
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Size C	Document Number AV BOARD	Rev 0
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MMM Symptom Table

Bar code	sympton Table	Description	English Description
	M100	= - r † D	No power
	M200	l	Poor Cosmetic
	M300	» l	Poor Assembly
!	M400	v D	Press Button Abnormal
"	M500	" D	Sound Abnormal
"	# M526	ø l	Poor Doom Function
#	M600	D	Poor Adjustment
$	M700	} º D	Poor Brightness
%	M800	] D	Poor Picture
%	# M826	]	Picture flash
&	M900	K ¢ D	Poor focus
	MA00	fl „ D	Poor Convergence
	MB00	/ l	Linearity Distortion
	MC00	ª D	Poor Degaussing
	MD00	ª [l	Power Consumption out of spec
	ME00	‰ D	Poor Horizontal Scan
	MF00	¿ 4 D	Poor Vertical Scan
	MG00	PUR D	Poor Purity
	MH00	Q D	Color abnormal
	MI00	5 l	Poor Color temperature
	MJ00	„ S D	Background abnormal
	MK00	˘ D	Hold down voltage abnormal
	ML00	LED l	LED Defect
	MM00	¿ l	Shock Noise
	MN00	CRT l	CRT defect
	MO00	s D	Infrared Receiver abnormal
	MP00	OSD D	No OSD
	M000	NDF	No Defect Found

REPLACEMENT PARTS LIST

VER 1.0

1. MAIN BOARD

MAIN PWB	82	QPWB51036-1G---	MAIN BOARD			
C001	21	VCEACU1CG477M-P	470uF	16V	±20%	Aluminum Elect.
C002,044,099	20	VCKBDU1HY103K-P	.01uF	50V	±10%	High Diel. Ceramic
C010	18	VCKBDU1HY123K-P	.012uF	50V	±10%	High Diel. Ceramic
C011,012	84	VCDCDU1HH120J-P	12PF	50V	±5%	Temp. Comp. Ceramic
C013	20	VCEACU1CG107M-P	100uF	16V	±20%	Aluminum Elect.
C015,022~026	79	VCSFDU1HY104Z-P	.1uF	50V	+80%-20%	Semiconductor Ceramic
C017,018	72	VCKBDU1HY682K-P	6800PF	50V	±10%	High Diel. Ceramic
C020,033	44	VCKBDU1HY102K-P	1000PF	50V	±10%	High Diel. Ceramic
C021	68	VCKBDU1HY101K-P	100PF	50V	±10%	High Diel. Ceramic
C028,029	79	VCSFDU1HY104Z-P	.1uF	50V	+80%-20%	Semiconductor Ceramic
C030	77	VCEACU1HG105M-P	1uF	50V	±20%	Aluminum Elect.
C031,068	69	VCKBDU1HY471K-P	470PF	50V	±10%	High Diel. Ceramic
C034	82	VCEACU1CG227M-P	220uF	16V	±20%	Aluminum Elect.
C035,037	79	VCSFDU1HY104Z-P	.1uF	50V	+80%-20%	Semiconductor Ceramic
C042	52	VCEACU1AG107M-P	100uF	10V	±20%	Aluminum Elect.
C043,050	79	VCSFDU1HY104Z-P	.1uF	50V	+80%-20%	Semiconductor Ceramic
C045,046	22	VCDCDU1HH330J-P	33PF	50V	±5%	Temp. Comp. Ceramic
C047	43	VCMECU1JG473J-P	.047uF	63V	±5%	Metal Ploy. Film
C049	53	VCEACU1AG477M-P	470uF	10V	±20%	Aluminum Elect.
C051,052,053	88	VCKBDU1HY331K-P	330PF	50V	±10%	High Diel. Ceramic
C060~064	79	VCSFDU1HY104Z-P	.1uF	50V	+80%-20%	Semiconductor Ceramic
C066,067	79	VCSFDU1HY104Z-P	.1uF	50V	+80%-20%	Semiconductor Ceramic
C101,102,103	53	VCEACU1HG106M-P	10uF	50V	±20%	Aluminum Elect.
C101L	26	VCEACU1HG226M-P	22uF	50V	±20%	Aluminum Elect.
C108~110,113	53	VCEACU1HG106M-P	10uF	50V	±20%	Aluminum Elect.
C111,120	20	VCEACU1CG107M-P	100uF	16V	±20%	Aluminum Elect.
C124,126,130	53	VCEACU1HG106M-P	10uF	50V	±20%	Aluminum Elect.
C128	54	VCEACU1HG476M-P	47uF	50V	±20%	Aluminum Elect.
C132,140	53	VCEACU1HG106M-P	10uF	50V	±20%	Aluminum Elect.
C190A~192A	53	VCEACU1HG106M-P	10uF	50V	±20%	Aluminum Elect.
C501	79	VCSFDU1HY104Z-P	.1uF	50V	+80%-20%	Semiconductor Ceramic
C502	18	VCEACU1VG107M-P	100uF	35V	±20%	Aluminum Elect.
C503	53	VCEACU1HG106M-P	10uF	50V	±20%	Aluminum Elect.
C504	81	VCPELF1HG224J--	.22uF	50V	±5%	Polyprolyene Film
C505	77	VCEACU1HG105M-P	1uF	50V	±20%	Aluminum Elect.
C507	29	VCEACU1HG107M-P	100uF	50V	±20%	Aluminum Elect.
C510,511	20	VCKBDU1HY103K-P	.01uF	50V	±10%	High Diel. Ceramic
C512	87	VCSBDU1HY223K-P	10uF	250V	±20%	Aluminum Elect.
C601,6D9	26	VCEACU1HG226M-P	22uF	50V	±20%	Aluminum Elect.
C602	82	VCKBDU2HY681K-P	680PF	500V	±10%	High Diel. Ceramic
C603	77	VCEACU1HG105M-P	1uF	50V	±20%	Aluminum Elect.
C604	67	VCEACU1JG107M-P	100uF	63V	±20%	Aluminum Elect.
C605	09	VCMPHF2AG824J--	.82uF	100V	±5%	Metal Ploy. Film
C606	49	RC-MP912J-13C--	9100PF	1.6KV	±5%	Metal Ploy. Film
C607	30	VCKBDU2HY102K-P	1000PF	500V	±10%	High Diel. Ceramic
C608	12	VCMPHF2GG274J--	.27uF	400V	±5%	Metal Ploy. Film
C609	52	VCMPHF2GG155J--	1.5uF	400V	±5%	Metal Ploy. Film
C610,669	15	VCPPHF2GG224J--	.22uF	400V	±5%	Polyprolyene Film
C611,685,687	42	VCPPHF2GG104J--	.1uF	400V	±5%	Polyprolyene Film

REPLACEMENT PARTS LIST

C612,614	17	VCKBDF2HY682K--	6800PF	500V	10%	High Diel. Ceramic
C613,617,686	50	VCDCDU2HH220J-P	22PF	500V	5%	Temp. Comp. Ceramic
C620,621,667	77	VCEACU1EG107M-P	100uF	25V	20%	Aluminum Elect.
C622,651,653	20	VCKBDU1HY103K-P	.01uF	50V	10%	High Diel. Ceramic
C623,649	54	VCPPHF2JG822J--	8200PF	630V	5%	Polyprolyene Film
C624	88	VCKBDU1HY331K-P	330PF	50V	10%	High Diel. Ceramic
C625	37	VCPPLU2AY102G--	1000PF	100V	2%	Polyprolyene Film
C631	41	VCKBDU1HY221K-P	220PF	50V	10%	High Diel. Ceramic
C634,670,6D0	77	VCEACU1HG105M-P	1uF	50V	20%	Aluminum Elect.
C635	84	VCPPLU2AY681G--	2700PF	200V	2%	Polyprolyene Film
C637,655	21	VCEACU1CG477M-P	470uF	16V	20%	Aluminum Elect.
C638	17	VCEACU1CG226M-P	22uF	16V	20%	Aluminum Elect.
C639	50	VCEACU1HG225M-P	2.2uF	50V	20%	Aluminum Elect.
C640	60	VCPELU1HG104J-P	.1uF	50V	5%	Polyprolyene Film
C643	15	VCPELU1HG333J-P	.033uF	50V	5%	Polyprolyene Film
C644,668	68	VCKBDU1HY101K-P	100PF	50V	10%	High Diel. Ceramic
C645,6C2,6C9	53	VCEACU1HG106M-P	10uF	50V	20%	Aluminum Elect.
C646,680	20	VCEACU1CG107M-P	100uF	16V	20%	Aluminum Elect.
C647,693,696	18	VCMECU1JG104J-P	.1uF	63V	5%	Metal Ploy. Film
C648	08	RC-MP103J-13C--	.01uF	1.6KV	5%	Metal Ploy. Film
C650	42	VCPPHF2GG272J--	2700PF	400V	5%	Polyprolyene Film
C654	17	VCKBDU1HY222K-P	2200PF	50V	10%	High Diel. Ceramic
C660	07	VCKBDU1HY681K-P	680PF	50V	10%	High Diel. Ceramic
C661,664,666	79	VCSFDU1HY104Z-P	.1uF	50V	+80%-20%	Semiconductor Ceramic
C662	10	VCMECU2AG222J-P	2200PF	100V	5%	Metal Ploy. Film
C663	45	VCKBDU1HY472K-P	4700PF	50V	10%	High Diel. Ceramic
C665	21	VCKBDU1HY392K-P	3900PF	50V	10%	High Diel. Ceramic
C671	38	VCEACF2DG107M--	100uF	200V	20%	Aluminum Elect.
C672	18	VCPPHF2DG123J--	.012uF	200V	5%	Polyprolyene Film
C674,6D3	12	VCEACU1HG104M-P	.1uF	50V	20%	Aluminum Elect.
C675,6E4	20	VCKBDU1HY271K-P	270PF	50V	10%	High Diel. Ceramic
C682,684	17	VCKBDF2HY682K--	6800PF	500V	10%	High Diel. Ceramic
C691	77	VCPELU1HG123J--	.012uF	50V	5%	Polyprolyene Film
C692	42	VCMECU1JG103J-P	.01uF	63V	5%	Metal Ploy. Film
C694,6C3	68	VCMECU2AG822J-P	8200PF	100V	5%	Metal Ploy. Film
C697	11	VCMECU1JG124J-P	.12uF	63V	5%	Metal Ploy. Film
C699	44	VCKBDU1HY102K-P	1000PF	50V	10%	High Diel. Ceramic
C6A0,6A3	21	VCEACU1CG477M-P	470uF	16V	20%	Aluminum Elect.
C6A1	03	VCDCDU1HH470J-P	47PF	50V	5%	Temp. Comp. Ceramic
C6A4	87	VCPELU1HG563J-P	.056uF	50V	5%	Polyprolyene Film
C6A6	64	VCEACF1CG336M-P	33uF	16V	20%	Aluminum Elect.
C6A7	05	VCDCDU1HH560J-P	56PF	50V	5%	Temp. Comp. Ceramic
C6A9,6B1	20	VCKBDU1HY103K-P	.01uF	50V	10%	High Diel. Ceramic
C6C1	03	VCEACU1JG476M-P	47uF	63V	20%	Aluminum Elect.
C6C6	26	VCKBEF3DY103Z--	.01uF	2KV	+80%-20%	High Diel. Ceramic
C6D2	52	VCPPHF3CG472J--	4700PF	1.6KV	5%	Polyprolyene Film
C6D4	88	VCEACU2EG476M-P	47uF	250V	20%	Aluminum Elect.
C6D6	41	VCMPHF2EG225J--	2.2uF	250V	5%	Metal Ploy. Film
C6D7,6I3	82	VCEACU1CG227M-P	220uF	16V	20%	Aluminum Elect.
C6E0	14	VCENCU2DG475M--	4.7uF	200V	20%	Aluminum Elect.

C6E1,6E5,6E6	68	VCKBDU1HY101K-P	100PF	50V	±10%	High Diel. Ceramic
C6E2	86	VCPPHF2GG333J--	.033uF	400V	±5%	Polyprolyene Film
C6E3	39	VCKBDU3AY102K-P	1000PF	1000V	±10%	High Diel. Ceramic
C6I1	70	VCEHCF1HG475M--	4.7uF	50V	±20%	Aluminum Elect.
C6I2	47	VCKBDU1HY562K-P	5600PF	50V	±10%	High Diel. Ceramic
C6I4,6I6	73	VCEACU1HG336M-P	33uF	50V	±20%	Aluminum Elect.
C6I5	78	VCEACU1HG475M-P	4.7uF	50V	±20%	Aluminum Elect.
C6I7	34	VCMECU1JG154J-P	.15uF	63V	±5%	Metal Ploy. Film
C6P1	53	VCEACU1HG106M-P	10uF	50V	±20%	Aluminum Elect.
C701,704	65	VCPEEF7EY474MX1	.47uF	AC250V	±20%	Polyprolyene Film
C702,703	33	VCKEDF7GY222MX3	2200PF	AC400V	±20%	High Diel. Ceramic
C705	36	VCKEDF7GY103MX3	.01uF	AC400V	±20%	High Diel. Ceramic
C706,707	61	VCKEDF7GY472MX3	4700PF	AC400V	±20%	High Diel. Ceramic
C709	16	VCEALS2GY337M--	330uF	400V	±20%	Aluminum Elect.
C710	36	VCKEDF7GY103MX3	.01uF	AC400V	±20%	High Diel. Ceramic
C711	84	VCEACU2EG225M-P	2.2uF	250V	±20%	Aluminum Elect.
C712	50	VCEACU1HG225M-P	2.2uF	50V	±20%	Aluminum Elect.
C713	12	VCEACU1HG104M-P	.1uF	50V	±20%	Aluminum Elect.
C714	43	VCEACU1VG476M-P	47uF	35V	±20%	Aluminum Elect.
C715,719	53	VCEACU1HG106M-P	10uF	50V	±20%	Aluminum Elect.
C716	45	VCKBDU1HY472K-P	4700PF	50V	±10%	High Diel. Ceramic
C717	35	VCPELU1HG152J-P	1500PF	50V	±5%	Polyprolyene Film
C718	58	VCPELU1HG182J-P	1800PF	50V	±5%	Polyprolyene Film
C726	84	VCPELU1HG103J-P	.01uF	50V	±5%	Polyprolyene Film
C727,735	78	VCEACU1HG475M-P	4.7uF	50V	±20%	Aluminum Elect.
C731	79	VCSFDU1HY104Z-P	.1uF	50V	+80%-20%	Semiconductor Ceramic
C732,733	61	VCKEDF7GY472MX3	4700PF	AC400V	±20%	High Diel. Ceramic
C736	44	VCKBDU1HY102K-P	1000PF	50V	±10%	High Diel. Ceramic
C737	10	VCMECU2AG222J-P	2200PF	100V	±5%	Metal Ploy. Film
C741~745	20	VCEACU1CG107M-P	100uF	16V	±20%	Aluminum Elect.
C751,755	52	VCDCDF3AH101K--	100PF	1000V	±10%	Temp. Comp. Ceramic
C752	60	VCEACU2EG226M-P	22uF	250V	±20%	Aluminum Elect.
C753	87	VCEACU2EG106M-P	10uF	250V	±20%	Aluminum Elect.
C756	04	VCEACF2EH107M--	100uF	250V	±20%	Aluminum Elect.
C757	88	VCEACU2EG476M-P	47uF	250V	±20%	Aluminum Elect.
C758,766	53	VCEACF1HG108M--	100uF	50V	±20%	Aluminum Elect.
C760	17	VCEACF1CG228M-P	2200uF	16V	±20%	Aluminum Elect.
C764	21	VCEACU1CG477M-P	470uF	16V	±20%	Aluminum Elect.
C765	52	VCEACU1AG107M-P	100uF	10V	±20%	Aluminum Elect.
C767	26	VCEACU1HG226M-P	22uF	50V	±20%	Aluminum Elect.
C796	20	VCEACU1CG107M-P	100uF	16V	±20%	Aluminum Elect.
C799	20	VCKBDU1HY103K--	680PF	2KV	±10%	High Diel. Ceramic
C7A1	81	VCKBDU3DY681K--	680PF	2KV	±10%	High Diel. Ceramic
C7P1	13	VCEACU1EG476M-P	47uF	25V	±20%	Aluminum Elect.
CR01	52	VCEACU1AG107M-P	100uF	100V	±20%	Aluminum Elect.
BR701	54	VSIGBU6J-------	IC	GBU6J		
D001,005,009	89	VSD1N4148-----U	Diode	1N4148		
D035,101~105	89	VSD1N4148-----U	Diode	1N4148		
D503	89	VSD1N4148-----U	Diode	1N4148		
D601	34	VSDFR104-------	Diode	FR104		
D602	65	VSDMUR115------	Diode	MUR115		
D603	24	VSDFMQG5FMS----	Diode	FMQG5FMS		

D604,607,610	89	VSD1N4148-----U	Diode	1N4148
D605,606	10	VSDFR154------U	Diode	FR154
D609,630	73	VSDSUF30J------	Diode	SUF30J
D611,614	89	VSD1N4148-----U	Diode	1N4148
D615	74	VSD1N4002-----U	Diode	1N4002
D616~619	89	VSD1N4148-----U	Diode	1N4148
D620	67	VSDRGP10G-----U	Diode	RGP10G
D621,622,631	89	VSD1N4148-----U	Diode	1N4148
D640~644	89	VSD1N4148-----U	Diode	1N4148
D661,663,694	89	VSD1N4148-----U	Diode	1N4148
D664	37	VSDSF16-------U	Diode	SF16
D6C1,6C2	03	VSDRGP02-16E--U	Diode	RGP02-16E
D6C5	09	VSDHER305------	Diode	HER305
D6C6	89	VSD1N4148-----U	Diode	1N4148
D6C7	32	VSDRGP10D-----U	Diode	RGP10D
D6I1,6K1	89	VSD1N4148-----U	Diode	1N4148
D701,713,714	89	VSD1N4148-----U	Diode	1N4148
D711	44	VSDUR1J-------U	Diode	UR1J
D712	50	VSDFR103------U	Diode	FR103
D731,741,793	89	VSD1N4148-----U	Diode	1N4148
D751	08	VSDHER108------	Diode	HER108
D752,754	30	VSDUR1K-------U	Diode	UR1K
D753	37	VSDBY329-1200--	Diode	BY329-1200
D755,756	45	VSDHER303------	Diode	HER303
D757	31	VSDSR304-------	Diode	SR304
D759	38	VSDFR203------U	Diode	FR203
D7P1	89	VSD1N4148-----U	Diode	1N4148
F701	03	QFS-D312S-12Y--	Fuse	3.1A/250V
FB101~103	69	RCORA1037-1---U	Core	
FB601	15	RCORA1021-1---U	Core	
FB602~604	69	RCORA1037-1---U	Core	
FB701,702	80	RCORA1004-1----	Core	
FB703	37	QJUM-1039-1540U	Jumper	
FB711	15	RCORA1021-1---U	Core	
FB712	69	RCORA1037-1---U	Core	
FB751	15	RCORA1021-1---U	Core	
IC001	59	VSIP87C380-----	IC	P87C380
IC002	80	VSIM24C08BN1---	IC	M24C08BN1
IC003	76	VSIMC141541P---	IC	MC141541P
IC004	35	VSIM62393P-----	IC	M62393P
IC006	81	VSIS-80740AH---	IC	S-80740AH
IC103	52	VSIMC14066BCP--	IC	MC14066BCP
IC106	19	VSIAT24C21-----	IC	AT24C21
IC501	81	VSITDA8351-----	IC	TDA8351
IC631	11	VSI74HC221-----	IC	74HC221
IC632	15	VSILM358N------	IC	LM358N
IC661	18	VSIUC3843------	IC	UC3843
IC691	86	VSITDA4854-----	IC	TDA4854
IC6C1	68	VSINJM2904D----	IC	NJM2904D
IC711	13	VSIKA3842A-----	IC	KA3842A
IC712,713	15	VSIPC817C------	IC	PC817C
IC731	89	VSITL431CZ----P	Transistor	TL431CZ
IC791	54	VSILM2940CT12--	IC	LM2940CT12
IC792	84	VSINJM7805FA---	IC	NJM7805
IC793	04	VSINJM7809FA---	IC	NJM7809FA
J115	85	VL-DH120K0000-U	Peaking coil	12uH
L601	48	RCILL1074-1----	Coil	

L602	30	RCILL1075-1----	Coil	
L603	33	RCHOM1077-1320-	Choke	
L604	67	RCHO-1132-1----	Choke	
L605	30	VL-DH680K0000-U	Peaking coil	68uH
L661	49	RCHO-1139-1502-	Choke	
L6C1	33	RCHO-1134-1202-	Choke	
L6I1	64	RCHO-1135-1122-	Coil	Pincushion coil
L751,752,757	47	RCHO-1103-1111-	Choke	
L762	37	QJUM-1039-1540U	Jumper	
L831	67	VL-DH100K0000-U	Peaking Coil	10uH
Q001~003	01	VST2SC1815Y---P	Transistor	2SC1815Y
Q004	82	VSIDTC144ES---P	IC	DTC144ES
Q005	67	VST2SB857WC----	Transistor	2SB857WC
Q031,035	01	VST2SC1815Y---P	Transistor	2SC1815Y
Q010,012,034	82	VSIDTC144ES---P	IC	DTC144ES
Q105,107	82	VSIDTC144ES---P	IC	DTC144ES
Q109,111,113	57	VST2SC11906----P	Transistor	2SC1906
Q114	01	VST2SC1815Y---P	Transistor	2SC1815Y
Q120~122	57	VST2SC1906----P	Transistor	2SC1906
Q501,502	01	VST2SC1815Y---P	Transistor	2SC1815Y
Q503	82	VSIDTC144ES---P	IC	DTC144ES
Q601	75	VST2SC2383Y----	Transistor	2SC2383Y
Q602,631,635	01	VST2SC1815Y---P	Transistor	2SC1815Y
Q603	63	VST2SA1020Y---P	Transistor	2SA1020Y
Q604	56	VST2SC5331-----	Transistor	2SC5331
Q605,611,624	67	VST2SC1318R---P	Transistor	2SC1318R
Q606,608	80	VSTIRF630------	Transistor	IRF630
Q607,609	66	VSTKSP42------P	Transistor	KSP42
Q612	22	VSTBD139-------	Transistor	BD139
Q613	86	VSTBD140-------	Transistor	BD140
Q620,629	80	VSTIRF630------	Transistor	IRF630
Q621,634	82	VSIDTC144ES---P	IC	DTC144ES
Q622,623,663	87	VST2SA1015Y---P	Transistor	2SC1015Y
Q625,630	66	VSTKSP42------P	Transistor	KSP42
Q632	36	VSTMPS3646----P	Transistor	MPS3646
Q661,664,691	01	VST2SC1815Y---P	Transistor	2SC1815Y
Q665,6D4	50	VSTIRF740------	Transistor	IRF740
Q692	63	VST2SA950Y----P	Transistor	2SC950Y
Q693	75	VST2SC2120Y---P	Transistor	2SC2120Y
Q694~696	82	VSIDTC144ES---P	IC	DTC144ES
Q6C4	46	VST2SC4152-----	Transistor	2SC4152
Q6C7	27	VST2SC1213C---P	Transistor	2SC1213C
Q6C8	78	VST2SA673C----P	Transistor	2SA673C
Q6C9	48	VST2SK1358-----	Transistor	2SK1358
Q6D1	67	VST2SC1318R---P	Transistor	2SC1318R
Q6D2,6D9	01	VST2SC1815Y---P	Transistor	2SC1815Y
Q6D3	87	VST2SA1015Y---P	Transistor	2SC1015Y
Q6I1	06	VST2SB861C-----	Transistor	2SB861C
Q6I2	43	VST2SB716ADTZ-P	Transistor	2SB716ADTZ
Q6I3	23	VST2SD667AC---P	Transistor	2SD667AC
Q6I4,6I5	01	VST2SC1815Y---P	Transistor	2SC1815Y
Q6P1	01	VST2SC1815Y---P	Transistor	2SC1815Y
Q701,712	01	VST2SC1815Y---P	Transistor	2SC1815Y
Q711	82	VSIDTC144ES---P	IC	DTC144ES
Q713	19	VSTSTW9NA80----	Transistor	STW9NA80
Q731,732	01	VST2SC1815Y---P	Transistor	2SC1815Y

Q7P1	87	VST2SA1015Y---P	Transistor	2SC1015Y		
R001,004	31	VRCPTV6--221J-U	220 ohm	1/6W	5%	Carbon Film
R002	05	RNWRA2019-1332	3.3K ohm			
R003	10	VRCPTV6--103J-U	10K ohm	1/6W	5%	Carbon Film
R007	26	VRCPTV6--153J-U	15K ohm	1/6W	5%	Carbon Film
R008,019	73	VRCPTV6--182J-U	1.8K ohm	1/6W	5%	Carbon Film
R010,011,013	10	VRCPTV6--103J-U	10K ohm	1/6W	5%	Carbon Film
R012,071	78	VRCPTV6--331J-U	330 ohm	1/6W	5%	Carbon Film
R014,051,057	34	VRCPTV6--102J-U	1K ohm	1/6W	5%	Carbon Film
R015,045	59	VRCPTV6--471J-U	470 ohm	1/6W	5%	Carbon Film
R016,021~024	10	VRCPTV6--103J-U	10K ohm	1/6W	5%	Carbon Film
R017,034	11	VRCPTV6--473J-U	47K ohm	1/6W	5%	Carbon Film
R020,097	11	VRCPTV6--392J-U	3.9K ohm	1/6W	5%	Carbon Film
R025,028	54	VRCPTV6--332J-U	3.3K ohm	1/6W	5%	Carbon Film
R026	13	VRCPTV6--563J-U	56K ohm	1/6W	5%	Carbon Film
R027,069,073	35	VRCPTV6--472J-U	4.7K ohm	1/6W	5%	Carbon Film
R029,0A2	30	VRCPTV6--333J-U	33K ohm	1/6W	5%	Carbon Film
R030,036	07	VRCPTV6--222J-U	2.2K ohm	1/6W	5%	Carbon Film
R031	71	VRNMK02--270J--	27 ohm	2W	5%	Metal Oxilde Film
R033,038	58	VRCPTV6--101J-U	100 ohm	1/6W	5%	Carbon Film
R037,039	54	VRCPTV6--332J-U	3.3K ohm	1/6W	5%	Carbon Film
R040,042,044	58	VRCPTV6--101J-U	100 ohm	1/6W	5%	Carbon Film
R041,043	10	VRCPTV6--103J-U	10K ohm	1/6W	5%	Carbon Film
R050	54	VRMPTV6-1002F-U	10K ohm	1/6W	1%	Metel Film
R056,060,072	10	VRCPTV6--103J-U	10K ohm	1/6W	5%	Carbon Film
R061,080	34	VRCPTV6--102J-U	1K ohm	1/6W	5%	Carbon Film
R064	10	VRCPTV6--750J-U	75 ohm	1/6W	5%	Carbon Film
R066,091	62	VRCPTV6--682J-U	6.8K ohm	1/6W	5%	Carbon Film
R067,6C4,6E3,	76	VRCPTV6--393J-U	39K ohm	1/6W	5%	Carbon Film
R070,098	54	VRCPTV6--332J-U	3.3K ohm	1/6W	5%	Carbon Film
R074	35	VRCPTV6--472J-U	4.7K ohm	1/6W	5%	Carbon Film
R078	76	VRCPTV6--474J-U	470K ohm	1/6W	5%	Carbon Film
R079	14	VRCPTV6--202J-U	2K ohm	1/6W	5%	Carbon Film
R081,0B4	11	VRCPTV6--392J-U	3.9K ohm	1/6W	5%	Carbon Film
R082,083	58	VRCPTV6--101J-U	100 ohm	1/6W	5%	Carbon Film
R084,088,089	10	VRCPTV6--103J-U	10K ohm	1/6W	5%	Carbon Film
R085~087,0C1	07	VRCPTV6--222J-U	2.2K ohm	1/6W	5%	Carbon Film
R090	50	VRCPTV6--152J-U	1.5K ohm	1/6W	5%	Carbon Film
R092,094,099	10	VRCPTV6--103J-U	10K ohm	1/6W	5%	Carbon Film
R095,0B2	37	VRCPTV6--562J-U	5.6K ohm	1/6W	5%	Carbon Film
R0A1	02	VRCPTV6--154J-U	150K ohm	1/6W	5%	Carbon Film
R0A3,0A4	58	VRCPTV6--101J-U	100 ohm	1/6W	5%	Carbon Film
R0A7~0A8,0B1	10	VRCPTV6--103J-U	10K ohm	1/6W	5%	Carbon Film
R0A9	75	VRCPTV6--104J-U	100K ohm	1/6W	5%	Carbon Film
R0B5,0B6	58	VRCPTV6--101J-U	100 ohm	1/6W	5%	Carbon Film
R101,102,103	10	VRCPTV6--750J-U	75 ohm	1/6W	5%	Carbon Film
R104,135,138	07	VRCPTV6--222J-U	2.2K ohm	1/6W	5%	Carbon Film
R105	64	VRCPTV2--181J-U	180 ohm	1/2W	5%	Carbon Film
R117,118,119	10	VRCPTV6--750J-U	75 ohm	1/6W	5%	Carbon Film
R128,129,130	27	VRCPTV6--122J-U	1.2K ohm	1/6W	5%	Carbon Film
R131,133,152	35	VRCPTV6--472J-U	4.7K ohm	1/6W	5%	Carbon Film
R134,199	58	VRCPTV6--101J-U	100 ohm	1/6W	5%	Carbon Film
R136,139	72	VRCPTV6--223J-U	22K ohm	1/6W	5%	Carbon Film
R141~144	75	VRCPTV6--104J-U	100K ohm	1/6W	5%	Carbon Film
R146~148,160	75	VRCPTV6--104J-U	100K ohm	1/6W	5%	Carbon Film

R149	27	VRNMK01--181J--	180 ohm	1W	5%	Metal Oxilde Film
R150	37	VRCPTV6--562J-U	5.6K ohm	1/6W	5%	Carbon Film
R154	07	VRCPTV6--222J-U	2.2K ohm	1/6W	5%	Carbon Film
R155	61	VRCPTV6--561J-U	560 ohm	1/6W	5%	Carbon Film
R165,166,167	11	VRCPTV6--392J-U	3.9K ohm	1/6W	5%	Carbon Film
R190~192	27	VRCPTV6--122J-U	1.2K ohm	1/6W	5%	Carbon Film
R190A~192A	74	VRCPTV6--151J-U	150 ohm	1/6W	5%	Carbon Film
R190B~192B	38	VRCPTV6--683J-U	68K ohm	1/6W	5%	Carbon Film
R501	65	VRMPTV6-7501F-U	7.5K ohm	1/6W	1%	Metel Film
R502	54	VRCPTV2--220J-U	22 ohm	1/2W	5%	Carbon Film
R503	57	VRNMT02--R82J--	.82 ohm	2W	5%	Metal Oxilde Film
R505	12	VRNMK02--R22J--	.22 ohm	2W	5%	Metal Oxilde Film
R506	38	VRCPTV6--683J-U	68K ohm	1/6W	5%	Carbon Film
R507	63	VRNMK02--101J--	100 ohm	2W	5%	Metal Oxilde Film
R508	41	VRCPTV6--823J-U	82K ohm	1/6W	5%	Carbon Film
R515	10	VRCPTV6--103J-U	10K ohm	1/6W	5%	Carbon Film
R516,519	07	VRCPTV6--222J-U	2.2K ohm	1/6W	5%	Carbon Film
R517,518	72	VRCPTV6--223J-U	22K ohm	1/6W	5%	Carbon Film
R520	62	VRCPTV6--682J-U	6.8K ohm	1/6W	5%	Carbon Film
R521	17	VRCPTV6--824J-U	820K ohm	1/6W	5%	Carbon Film
R601,656,659	34	VRCPTV6--102J-U	1K ohm	1/6W	5%	Carbon Film
R602,619,632	37	VRCPTV6--562J-U	5.6K ohm	1/6W	5%	Carbon Film
R603	25	VRNMT03--391J--	390 ohm	3W	5%	Metal Oxilde Film
R604,605,613	38	VRCPTV6--683J-U	68K ohm	1/6W	5%	Carbon Film
R606	29	VRCPTV2--682J-U	6.8K ohm	1/2W	5%	Carbon Film
R607	72	VRCPTV6--223J-U	22K ohm	1/6W	5%	Carbon Film
R608	30	VRNLQ03--390J--	39 ohm	3W	5%	Metal Oxilde Film
R609	43	VRNMT03--331J--	330 ohm	3W	5%	Metal Oxilde Film
R610	33	VRNMK03--R68J--	.68 ohm	3W	5%	Metal Oxilde Film
R612	61	VRNLQ05--561J--	39 ohm	3W	5%	Metal Oxilde Film
R614,6E8	75	VRCPTV6--104J-U	100K ohm	1/6W	5%	Carbon Film
R615,617,	42	VRCPTV2--104J-U	100K ohm	1/2W	5%	Carbon Film
R616,618	41	VRCPTV4--563J-U	56K ohm	1/4W	5%	Carbon Film
R620,6A4	62	VRCPTV6--682J-U	6.8K ohm	1/6W	5%	Carbon Film
R621	31	VRCPTV6--221J-U	220 ohm	1/6W	5%	Carbon Film
R622	72	VRCPTV6--223J-U	22K ohm	1/6W	5%	Carbon Film
R623,633,669	54	VRCPTV6--332J-U	3.3K ohm	1/6W	5%	Carbon Film
R625,637,6H9	03	VRCPTV6--123J-U	12K ohm	1/6W	5%	Carbon Film
R626,655	38	VRCPTV6--683J-U	68K ohm	1/6W	5%	Carbon Film
R627~630,6H8	41	VRCPTV6--823J-U	82K ohm	1/6W	5%	Carbon Film
R631	11	VRCPTV6--473J-U	47K ohm	1/6W	5%	Carbon Film
R634,668,6H1	73	VRCPTV6--182J-U	1.8K ohm	1/6W	5%	Carbon Film
R635,638	10	VRCPTV6--103J-U	10K ohm	1/6W	5%	Carbon Film
R636	28	VRCPTV2--561J-U	560 ohm	1/2W	5%	Carbon Film
R639	79	VRMPTV6-2492F-U	24.9K ohm	1/6W	1%	Metel Film
R639A		VRCPTV6--181J-U	180 ohm	1/6W	5%	Carbon Film
R640	37	QJUM-1039-1540U	Jumper			
R642,643	14	VRCPTV4--104J-U	100K ohm	1/4W	5%	Carbon Film
R645	26	VRCPTV6--153J-U	15K ohm	1/6W	5%	Carbon Film
R646	60	VRMPTV6-1502F-U	15K ohm	1/6W	1%	Metel Film
R647	13	VRCPTV6--563J-U	56K ohm	1/6W	5%	Carbon Film
R650,6I3	65	VRCPTV6--822J-U	8.2K ohm	1/6W	5%	Carbon Film
R651,663,683	10	VRCPTV6--103J-U	10K ohm	1/6W	5%	Carbon Film
R652,673	35	VRCPTV6--472J-U	4.7K ohm	1/6W	5%	Carbon Film
R653,658,6C5	11	VRCPTV6--473J-U	47K ohm	1/6W	5%	Carbon Film
R654	02	VRCPTV6--154J-U	150K ohm	1/6W	5%	Carbon Film
R660,664	25	VRCPTV6--100J-U	10 ohm	1/6W	5%	Carbon Film

R661	86	VRMPTV6-5902F-U	56K ohm	1/6W	1%	Metal Film
R662,687	27	VRCPTV6--122J-U	1.2K ohm	1/6W	5%	Carbon Film
R666,667,670	72	VRCPTV6--223J-U	22K ohm	1/6W	5%	Carbon Film
R672	58	VRCPTV6--101J-U	100 ohm	1/6W	5%	Carbon Film
R674	38	VRMPTV4-8252F-U	82.5K ohm	1/4W	1%	Metel Film
R675	14	VRMPTV6-6812F-U	68.1K ohm	1/6W	1%	Metel Film
R676	70	VRMPTV6-4301F-U	4.3K ohm	1/6W	1%	Metel Film
R681,689,696	35	VRCPTV6--472J-U	4.7K ohm	1/6W	5%	Carbon Film
R682	83	VRMPTV6-3482F-U	34.8K ohm	1/6W	5%	Metel Film
R684,6H4	78	VRCPTV6--331J-U	330 ohm	1/6W	5%	Carbon Film
R686	84	VRCPTV6--753J-U	75K ohm	1/6W	5%	Carbon Film
R688	75	VRCPTV6--104J-U	100K ohm	1/6W	5%	Carbon Film
R690,698	34	VRCPTV6--102J-U	1K ohm	1/6W	5%	Carbon Film
R691	79	VRMPTV6-4701F-U	4.7K ohm	1/6W	1%	Metel Film
R692,697	07	VRCPTV6--222J-U	2.2K ohm	1/6W	5%	Carbon Film
R693	54	VRCPTV6--332J-U	3.3K ohm	1/6W	5%	Carbon Film
R694,6I6	37	VRCPTV6--562J-U	5.6K ohm	1/6W	5%	Carbon Film
R695	13	VRMPTV6-2202F-U	22K ohm	1/6W	1%	Metel Film
R699	30	VRCPTV6--333J-U	33K ohm	1/6W	5%	Carbon Film
R6A2	30	VRMPTV6-1003F-U	100K ohm	1/6W	1%	Metel Film
R6A3	33	VRMPTV6-3323F-U	332K ohm	1/6W	1%	Metel Film
R6A5,6B6,6I8	89	VRCPTV6--821J-U	820 ohm	1/6W	5%	Carbon Film
R6A6	30	VRNMK02--100J--	10 ohm	2W	5%	Metal Oxide Film
R6A7	13	VRCPTV6--563J-U	56K ohm	1/6W	5%	Carbon Film
R6A8	71	VRCPTV6--335J-U	3.3M ohm	1/6W	5%	Carbon Film
R6A9	30	VRCPTV6--333J-U	33K ohm	1/6W	5%	Carbon Film
R6B1,6B2	62	VRCPTV4--102J-U	1K ohm	1/4W	5%	Carbon Film
R6B3	44	VRNMK01--100J--	10 ohm	1W	5%	Metal Oxide Film
R6B7	28	VRCPTV6--560J-U	56 ohm	1/6W	5%	Carbon Film
R6B8,6F5	72	VRCPTV6--223J-U	22K ohm	1/6W	5%	Carbon Film
R6C1,6H5	11	VRCPTV6--392J-U	3.9K ohm	1/6W	5%	Carbon Film
R6C2,6D8	14	VRCPTV4--104J-U	100K ohm	1/4W	5%	Carbon Film
R6C3,6C7	41	VRCPTV4--563J-U	56K ohm	1/4W	5%	Carbon Film
R6C6,6E1	79	VRCPTV6--203J-U	20K ohm	1/6W	5%	Carbon Film
R6C8,6F7	42	VRCPTV2--104J-U	100K ohm	1/2W	5%	Carbon Film
R6C9	56	VRCPTV2--1R0J-U	1 ohm	1/2W	5%	Carbon Film
R6D1	81	VRCPTV2--184J-U	180K ohm	1/2W	5%	Carbon Film
R6D2	51	VRCPTV6--273J-U	27K ohm	1/6W	5%	Carbon Film
R6D3,6D4	45	VRCPTV2--564J-U	560K ohm	1/2W	5%	Carbon Film
R6D5,6I4	13	VRCPTV6--563J-U	56K ohm	1/6W	5%	Carbon Film
R6D6	52	VRCPTV6--242J-U	2.4K ohm	1/6W	5%	Carbon Film
R6D7,6D9	26	VRCPTV6--153J-U	15K ohm	1/6W	5%	Carbon Film
R6E4,6E5,6F1	58	VRCPTV6--101J-U	100 ohm	1/6W	5%	Carbon Film
R6E6	87	VRCPTV6--220J-U	22 ohm	1/6W	5%	Carbon Film
R6E9,6K9	54	VRCPTV6--332J-U	3.3K ohm	1/6W	5%	Carbon Film
R6F3	74	VRMPTV6-5621F-U	5.62K ohm	1/6W	1%	Metal Film
R6F4	31	VRMPTV6-1202F-U	12K ohm	1/6W	1%	Metal Film
R6F6	63	VRCPTV4--472J-U	4.7K ohm	1/4W	5%	Carbon Film
R6F9	82	VRNMK01--R18J--	.18 ohm	1W	5%	Metal Oxide Film
R6G0	73	VRMPTV6-4020F-U	402 ohm	1/6W	1%	Metal Film
R6G1	74	VRMPTV6-5110F-U	511 ohm	1/6W	1%	Metal Film
R6G2	60	VRMPTV6-1502F-U	15K ohm	1/6W	1%	Metal Film
R6G3	27	VRCPTV6--274J-U	270K ohm	1/6W	5%	Carbon Film
R6G4	78	VRCPTV6--564J-U	560K ohm	1/6W	5%	Carbon Film
R6G5	01	VRCPTV2--102J-U	1K ohm	1/2W	5%	Carbon Film

R6G6	45	VRNMK01--470J--	47 ohm	1W	5%	Metal Oxide Film
R6G7	48	VRCPTV6--224J-U	220K ohm	1/6W	5%	Carbon Film
R6G9,6H0,6J2	72	VRCPTV6--223J-U	22K ohm	1/6W	5%	Carbon Film
R6H6	30	VRCPTV6--333J-U	33K ohm	1/6W	5%	Carbon Film
R6I0	73	VRNMK02--3R9J--	3.9 ohm	2W	5%	Metal Oxide Film
R6I1	02	VRNLQ03--1R0K--	1 ohm	3W	10%	Metal Oxide Film
R6I2	09	VRNLQ03--4R7K--	4.7 ohm	3W	10%	Metal Oxide Film
R6I5	61	VRCPTV6--561J-U	560 ohm	1/6W	5%	Carbon Film
R6I9	07	VRCPTV6--222J-U	2.2K ohm	1/6W	5%	Carbon Film
R6J0,6J1,6J4	07	VRCPTV6--222J-U	2.2K ohm	1/6W	5%	Carbon Film
R6J3	49	VRCPTV6--183J-U	18K ohm	1/6W	5%	Carbon Film
R6K1,6K8	10	VRCPTV6--103J-U	10K ohm	1/6W	5%	Carbon Film
R6K2	30	VRCPTV6--333J-U	33K ohm	1/6W	5%	Carbon Film
R6K3	13	VRNMT03--R56J--	.56 ohm	3W	5%	Metal Oxide Film
R6K7	78	VRCPTV6--2R2J-U	2.2 ohm	1/6W	5%	Carbon Film
R6M1,6M2	59	VRCPTV6--471J-U	470 ohm	1/6W	5%	Carbon Film
R6P1	68	VRCPTV6--124J-U	120K ohm	1/6W	5%	Carbon Film
R6P2	54	VRCPTV6--332J-U	3.3K ohm	1/6W	5%	Carbon Film
R6X1,6X2	58	VRCPTV6--101J-U	100 ohm	1/6W	5%	Carbon Film
R701	34	VRCPTV6--102J-U	1K ohm	1/6W	5%	Carbon Film
R702	10	VRCPTV6--103J-U	10K ohm	1/6W	5%	Carbon Film
R703,704	30	VRCPTV4--154J-U	150K ohm	1/4W	5%	Carbon Film
R706	76	VRCPTV4--224J-U	220K ohm	1/4W	5%	Carbon Film
R705	37	QJUM-1039-1540U	Jumper			
R707,711,712	53	VRCPTV4--184J-U	180K ohm	1/4W	5%	Carbon Film
R708	62	VRCPTV6--682J-U	6.8K ohm	1/6W	5%	Carbon Film
R714,715	55	VRCPTV4--274J-U	270K ohm	1/4W	5%	Carbon Film
R716,717	60	VRNMK01--823J--	82K ohm	1W	5%	Metal Oxide Film
R718	57	VRNMK01--683J--	68K ohm	1W	5%	Metal Oxide Film
R719	19	VRCPTV2--680J-U	68 ohm	1/2W	5%	Carbon Film
R720,721	75	VRCPTV6--104J-U	100K ohm	1/6W	5%	Carbon Film
R722	87	VRCPTV6--220J-U	22 ohm	1/6W	5%	Carbon Film
R723	27	VRCPTV6--122J-U	1.2K ohm	1/6W	5%	Carbon Film
R724	87	VRNMK03--R22J--	.22 ohm	3W	5%	Metal Oxide Film
R725	70	VRNMK02--R27J--	.27 ohm	2W	5%	Metal Oxide Film
R726	33	VRMPTV6—3012F-U	30.1 ohm	1/6W	1%	Metal Film
R727	49	VRCPTV6--183J-U	18K ohm	1/6W	5%	Carbon Film
R728	51	VRCPTV6--273J-U	27K ohm	1/6W	5%	Carbon Film
R729	38	VRCPTV4--103J-U	10K ohm	1/4W	5%	Carbon Film
R731	87	VRMPTV4-2673F-U	267K ohm	1/4W	1%	Metal Film
R732	54	VRCPTV4--153J-U	15K ohm	1/4W	5%	Carbon Film
R733	38	VRCPTV6--683J-U	68K ohm	1/6W	5%	Carbon Film
R734	78	VRCPTV4--152J-U	1.5K ohm	1/4W	5%	Carbon Film
R735	63	VRCPTV4--472J-U	4.7K ohm	1/4W	5%	Carbon Film
R736,741	76	VRCPTV6--393J-U	39K ohm	1/6W	5%	Carbon Film
R737,743	14	VRCPTV4--104J-U	100K ohm	1/4W	5%	Carbon Film
R738	14	VRCPTV6--202J-U	2K ohm	1/6W	5%	Carbon Film
R739	72	VRCPTV6--223J-U	22K ohm	1/6W	5%	Carbon Film
R740	54	VRCPTV6--332J-U	3.3K ohm	1/6W	5%	Carbon Film
R742	28	VRCPTV4--243J-U	24K ohm	1/4W	5%	Carbon Film
R744	37	QJUM-1039-1540U	Jumper			
R748	33	RR-NZR18J-101--	.18 ohm	1W	5%	Metal Oxide Film
R751,752	01	VRCPTV2--102J-U	1K ohm	1/2W	5%	Carbon Film
R753	15	VRCPTV2--224J-U	220K ohm	1/2W	5%	Carbon Film
R754,755	01	VRCPTV2--102J-U	1K ohm	1/2W	5%	Carbon Film
R756	58	VRCPTV2--154J-U	150K ohm	1/2W	5%	Carbon Film
R791	56	VRCPTV2--1R0J-U	1 ohm	1/2W	5%	Carbon Film

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R793	19	VRNMK01--1R0J--	1 ohm	1W	5%	Metal Oxide Film
R794	28	VRCPTV4--1R0J-U	1 ohm	1/4W	5%	Carbon Film
R7P1	30	VRCPTV6--333J-U	33K ohm	1/6W	5%	Carbon Film
R7P2	49	VRCPTV6--183J-U	1818K ohm	1/6W	5%	Carbon Film
RV81	38	VRCPTV6--683J-U	68K ohm	1/6W	5%	Carbon Film
RP97	10	VRCPTV6--103J-U	10K ohm	1/6W	5%	Carbon Film
RL601,603,604	85	RRLYD1088-1DXG-	Relay			
RL602	78	RRLYD1085-1DDG-	Relay			
RL701	01	RRLYD1080-1PDGA	Relay			
SO701	64	QSOCP1042-12X--	Socket			
SG601	29	QSPG-1011-1---U				
T601	55	RTRND1059-1----	Horizontal Driver Transformer			
T602	15	RTRN-1057-1----	Transformer			
T603,604	68	RTRN-1059-1----	Transformer			
T6C1	14	RTRNF1006-1----	Dynamic Focus Transformer			
T6C2	42	DFBTCC150-1660-	FBT			
T701	02	RCVTP1381-1----	Convert transformer			
T702,703	10	RCILF1088-1----	Coil			
TH701	24	VSH20S050M-----				
TH702	49	VSQDGC2R9R0Q---				
VR601	66	RVRSH6032-1502-	Variable Resistor	5K ohm		
VR691	70	RVRSH8003-8104-	Variable Resistor	100K ohm		
VR731	05	RVRSH6032-1501-	Variable Resistor	500 ohm		
VZ701	40	VSVV14K300-----				
X001	41	RCRSL1045-1----	Crystal	12MHZ		
ZD001	64	VSZMTZJ5.1B---U	Zener Diode	MTZJ5.1B		
ZD102,123,125	64	VSZMTZJ5.1B---U	Zener Diode	MTZJ5.1B		
ZD005,007	61	VSZHZ5C1------U	Zener Diode	HZ5C1		
ZD110	23	VSZHZ12A1-----U	Zener Diode	HZ12A1		
ZD130,131	49	VSZMTZ9.1B----U	Zener Diode	MTZ9.1B		
ZD601,605	64	VSZMTZJ5.1B---U	Zener Diode	MTZJ5.1B		
ZD603,604	80	VSZHZ12C1-----U	Zener Diode	HZ12C1		
ZD606,607	64	VSZMTZJ5.1B---U	Zener Diode	MTZJ5.1B		
ZD608	49	VSZMTZ9.1B----U	Zener Diode	MTZ9.1B		
ZD611,612	80	VSZHZ12C1-----U	Zener Diode	HZ12C1		
ZD661,6C2	22	VSZRD15EB3----U	Zener Diode	RD15EB3		
ZD6C1	19	VSZHZ20-04----U	Zener Diode	HZ20-04		
ZD711,731	64	VSZHZ12A1-----U	Zener Diode	HZ12A1		
ZD712	70	VSZHZ18-2-----U	Zener Diode	HZ18-2		
ZD713	61	VSZHZ5C1------U	Zener Diode	HZ5C1		
“D”	02	QCNCP1547-1----	Connector With Wire			
“GND1”	50	QCNCP1517-1----	Connector With Wire			
“O”	03	QCNCP1542-1----	Connector With Wire			
“RO”	42	QCNCP1540-1----	Connector With Wire			
A	69	QCNWS0307-1056-	Connector With Wire			
A1	68	QCNWS0303-1268-	Connector With Wire			
AO	56	QCNWS0305-1068	Connector With Wire			
B	79	QCNWS0308-1055-	Connector With Wire			
CV	17	QCNWS0046-1141-	Connector With Wire			
DB	08	QCNWS030A-1020-	Connector With Wire			
FR	27	QCNWS027C-1009-	Connector With Wire			
HS	11	QCNWS0047-1058-	Connector With Wire			
KH	85	QCNWS0049-1045-	Connector With Wire			
MS	67	QCNWS0309-1030-	Connector With Wire			
NH	85	QCNWS0049-1045-	Connector With Wire			
PO	48	QCNWS0044-1268-	Connector With Wire			

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SF	37	QCNWS0303-1275-	Connector With Wire
TM	51	QCNWS0306-1104-	Connector With Wire
“AO”	45	VCNCP0308-EJST-	Connector
“DB”	30	VCNCP030A-EJST-	Connector
“M”	62	VCNCP0022-----U	Connector
TH701 USE	62	VCNCP0022-----U	Connector
“U”TM“	09	VCNCP0305-EJST-	Connector
RGB181,183	07	QSOCD1550-115--	
	45	LANGF0729-1P---	QTMLA1113*3
	05	LFIX-0015-1P---	FIX PLATE
	58	PISLM0015-1P---	Silicon Rubber Q604 USE
	64	PCUSU0057-1----	Silicon Rubber Q6I1 USE
	64	PCUSU0131-1----	Cushion EVA FOR FBT
	68	PCUSU0219-1----	Silicon Rubber Q6I1USE
	85	PCUSP0054-1----	Silicon Rubber Q6C9,Q713 USE
	60	PRDAA0117-1P--I	RADIATOR Q6I1 USE
	15	PRDAA0138-1P---	RADIATOR D755,D756USE
	07	PRDAA0164-1P--A	RADIATOR IC501USE
	84	PRDAA0140-1P--B	RADIATOR Q6D4,Q665 USE
	89	PRDAA0143-1P---	RADIATOR D753,IC791,IC793USE
	36	PRDAA0170-1P--B	RADIATOR BR701,Q713USE
	77	PRDAA0171-1P---	RADIATOR Q612,Q613 USE
	44	PRDAA0176-1P--A	RADIATOR D603,Q604,6C9 USE
	16	PRDAM0035-1P---	RADIATOR D609,630USE
	71	QFSHC1017-1---P	PIN F701 USE
	71	QJAKM1076-1----	Audio jack
	65	QPINR1069-1----	PIN R503,603,609,6K3 USE
	65	QPINR1069-1----	PIN R6I1,6I2 USE
IC SOCKET	08	QSOCI1177-108--	IC SOCKET IC002USE
IC SOCKET	76	QSOCI1517-142--	IC SOCKET IC001 USE
	39	XBPSD30P10000--	SCREW D753,IC791,IC793,Q665,Q6D4,Q6I1USE
	46	XBPSD30P06000--	SCREW Q612,Q613 USE
	58	XEASD30P10000--	SCREW FBT*2
	74	XHISE40P08TV0--	SCREW EARTH*2
	44	XJASD30P08000--	SCREW AUDIO PWB & ANGLE*2
	77	XJASD30P10000--	SCREW BR701,D603,Q604,Q6C9,Q6I1,Q713, PRDAA0176*1 USE
	82	XJJSD30P10000--	SCREW IC501*2 USE

C383,384	29	VCENCT1EG475M--	4.7uF 25V 20% Aluminum Elect.
D	39	QCNCS1592-1---A	Connector With Wire
LO	56	QCNWP0092-1012-	Connector With Wire
LO	66	QCNWP0092-1018-	Connector With Wire
MS	67	QCNWS0309-1030-	Connector With Wire
GND1	02	QCNWS0651-1048-	Connector With Wire
	77	BRC-119D-------	R/C
	82	DBOXS0014-1FD-E	SPK BOX
	19	GBOX-0008-1FD-B	DOME SPK GUIDE BOX
	77	GBOXS0014-1FD-B	DOME SPK BOX
	55	GCABA0226-1FD--	CAB-A
	34	GCABB0268-1FD--	REAR CAB
	56	GCOVS0008-1FD-B	GUIDE COVER
	70	GDORP0199-1F---	DOOR
	43	GNETP0014-1P--	PET NET
	85	HBDGA0071-1G---	"SAMPO“ BADGE
	78	HDECP0362-1F---	ANT COVER
	70	JHNDP0020-1----	HANDLE SET
	30	JKNBP0510-1F---	POWER KNOB
	09	JKNBP0511-1F---	FUNCTION KNOB
	19	LANGP0180-1P---	POWER PWB ANGLE
	69	LANGP0182-1P---	AV BOARD ANGLE
	65	LCHSP0005-1F--I	CHASSIS
	48	LHLD-0180-1----	DOOR LOCKER
	62	LHLDW0008-1---A	QPWB51021*2
	15	LHLDW0084-1----	HOLDER ROTATION COIL USE
	18	LSTN-0009-1F--A	HOLD FOR CRT
	13	LX-WZ0019-1----	WASHER FOR CRT
	07	PCUSS0056-1Z---	CUSHION DOME SPK*2
	04	PCUSS0061-1----	SPONGE FOR CRT SHIELD
	01	PISLF0053-1P---	PVC INSULATOR
	74	PREFL0010-1F--A	PEFLECTOR FOR RC&LED
	82	PSLD-0008-1P--B	SHIELD-P FOR IC001
	56	PSLDM0276-1P--C	CRT PWB SHIELD
	59	PSPAG0020-1--A	CRT SPACER
	21	PWABS0017-1---A	WAVE ABSOPTION GBOXS0014(L*1,R*1)
	37	PWABS0027-1----	WAVE ABSOPTION GBOX-0008(L*2,R*2)
	58	PWABS0029-1---A	WAVE ABSOPTION GBOX-0008 L*1 R*1
	01	PWABS0029-1----	WAVE ABSOPTION GBOX-0008(L*1,R*1)
	61	PWABS0030-1----	WAVE ABSOPTION BOX-0008 L*1 R*1
	40	PWABS0031-1----	WAVE ABSOPTION GBOX-0008 L*1 R*1
	87	QACCF1063-1DX--	AC CORD
	58	QCODS1028-1D---	SIGNAL CABLE
	67	QPLGR1199-1----	AUDIO CABLE
	52	QTMLA1113-1F—A	ANT TML BOARD
	18	RBATB0213-1DC--	BATTERY (3)
	16	RCILG1078-1----	DEGAUSSING COIL
	61	RCILQ1019-1---A	ROTATION COIL
	23	RSPKER086-18TN-	SPEAKER SPK L-HI,R-HI
	29	RSPKKS087-18WNA	SPEAKER SPK L-LOW,R-LOW
	03	SPAKA0579-1F---	PACKING AD
	76	SPAKC0623-1R--A	PACKING CASE
	29	SSAKD0003-1----	PE BAG (MANUAL)
	59	SSAKH0097-1-T--	POLY BAG
	13	TINSE1822-1----	USER MANUAL

56	TLABD1025-1B--A	BAR CORD
48	TLABM0980-1B--A	WATNING LABEL (NOTICE DANGERS)
78	TLABM1014-1--A	MODEL LABEL
15	VBM81AHMSOX01--	CRT
46	XBPSD30P06000--	SCREW AV PWB*2
25	XEASD30P08000--	SCREW SPK*4
58	XEASD30P10000--	SCREW MAIN PWB*9, LED & CHASSIS USE, RC & LED REF*2, POWER KNOB*1, FUNCTION KNOB*3
35	XEASD30P12000--	SCREW FIX PLATE*1, POWER/SUB POWER&CHAS*3
59	XESSB30P12000--	SCREW ANT BOARD*4, AV*1, ANT COVER*2, AV*4
28	XETSB40P30000--	SCREW CAB-A/B*8
11	XETSD40P08000--	SCREW VM PWB*2
21	XETSD40P12000--	SCREW LANGP0180*1
44	XETSD40P10000--	SCREW SPK FIX
30	XETSD40P16000--	SCREW CAB-A & DOME*8, GBOX-0008 & GBOXSO, GCOVS0008 & GBOX0008 FIX, LANGS & DOME SPK*6
74	XHISE40P08TV0--	SCREW EARTH*1
77	XJASD30P10000--	SCREW PRDAA0128*2, AUDIO PWB*1, PRDAA0164*2, PRDAA0170*2, PRDAA0117*2, PWB*5, EAR USE
78	XJSSB30P12000--	SCREW LANGF0729*2, LANGP0182*3
34	XNESD80-65000--	SCREW M8 NUT FOR CRT SCREW
64	XTTSB40P16000--	SCREW QTMLA*4,CAB-A/B*2
64	XWTSD82-20154--	SCREW SPRING WASHER FOR CRT

2.AUDIO POWER BOARD

G PWB	14	QPWB51025-1B-1-	POWER / SOUND AMP BOARD			
C301,308,312	78	VCEACU1HG475M-P	4.7uF	50V	±20%	Aluminum Elect.
C302,307	15	VCEACU1HG564M-P	.56uF	50V	±20%	Aluminum Elect.
C303,306	50	VCPELU1HG822J-P	8200PF	50V	±5%	Polyprolyene Film
C304,305	13	VCEACU1HG474M-P	.47uF	50V	±20%	Aluminum Elect.
C309,311	53	VCEACU1HG106M-P	10uF	50V	±20%	Aluminum Elect.
C310	85	VCPELU1HG473J-P	.047uF	50V	±5%	Polyprolyene Film
C313,315	19	VCENCU1CG106M-P	10uF	16V	±20%	Aluminum Elect.
C318	50	VCEACU1HG225M-P	2.2uF	50V	±20%	Aluminum Elect.
C321	45	VCEACU1CG476M-P	47uF	16V	±20%	Aluminum Elect.
C322~324	77	VCEACU1HG105M-P	1uF	50V	±20%	Aluminum Elect.
C327,331	05	VCDCDU1HH560J-P	56PF	50V	±20%	
C328,333	32	VCEACU1HG334M-P	.33uF	50V	±20%	Aluminum Elect.
C329,334	74	VCEACU1HG224M-P	.22uF	50V	±20%	Aluminum Elect.
C332,342	53	VCEACU1HG106M-P	10uF	50V	±20%	Aluminum Elect.
C338,340	60	VCPELU1HG104J-P	.1uF	50V	±5%	Polyprolyene Film
C339,341	13	VCEACU1HG474M-P	.47uF	50V	±20%	Aluminum Elect.
C343,356,357	57	VCPELU1HG223J-P	.022uF	50V	±5%	Polyprolyene Film
C345,347	53	VCPELU1HG124J-P	.12uF	50V	±5%	Polyprolyene Film
C346	21	VCEACU1CG477M-P	470uF	16V	±20%	Aluminum Elect.
C351,352	32	VCEACU1HG334M-P	.33uF	50V	±20%	Aluminum Elect.
C358,359	83	VCEACU1VG108M-P	1000uF	35V	±20%	Aluminum Elect.
C366,367	10	VCKBDU1HY821K-P	820PF	50V	±10%	High Diel. Ceramic
C368	85	VCEACU1CG108M-P	1000uF	16V	±20%	Aluminum Elect.
C374,375	17	VCKBDU1HY222K-P	2200PF	50V	±10%	High Diel. Ceramic
C376	53	VCEACF1HG108M--	1000uF	50V	±20%	Aluminum Elect.
C385	77	VCEACU1EG107M-P	1uF	25V	±20%	Aluminum Elect.
C782	36	VCKBDU3AY221K-P	220PF	1KV	±10%	High Diel. Ceramic
C783	20	VCKBDU1HY103K-P	.01uF	50V	±10%	High Diel. Ceramic
C784,794	85	VCEACU1CG108M-P	1000uF	16V	±20%	Aluminum Elect.
C785	11	VCPPHF3AG273J--	.027uF	1KV	±5%	Polyprolyene Film
C786,787	33	VCKEDF7GY222MX3	2200PF	AC400V	±20%	High Diel. Ceramic
C788	62	VCRRDF3DY471K--	470PF	2KV	±10%	High Dielectric Ceramic
C789	26	VCEACF1HG228M--	2200uF	50V	±20%	Aluminum Elect.
C790	71	VCKFDU1HY223Z-P	.022uF	50V	+80%-20%	High Diel. Ceramic
C791,793	88	VCKBDU1HY331K-P	330PF	50V	±10%	High Diel. Ceramic
C792	78	VCEACU1EG477M-P	470uF	25V	±20%	Aluminum Elect.
C795	77	VCEACU1EG107M-P	1uF	25V	±20%	Aluminum Elect.
C797	87	VCSBDU1HY223K-P	.022PF	50V	±10%	
D301~309,316	89	VSD1N4148-----U	Diode	1N4148		
D785	89	VSD1N4148-----U	Diode	1N4148		
D786,787	68	VSDRGP10B-----U	Diode	RGP10B		
D788	49	VSDRGP10M-----U	Diode	RGP10M		
D789	14	VSDRGP30G------	Diode	RGP30G		
D790,791	14	VSDRGP10J-----U	Diode	RGP10J		
F301	81	QFS-D202F-12X--	Fuse	2A/250V		
FB781~783	15	RCORA1021-1---U	Core			
IC301	27	VSITA8184P-----	IC	TA8184P		
IC302	52	VSIMC14066BCP--	IC	MC14066BCP		
IC303~309	20	VSINJM4558D----	IC	NJM4558D		
IC310	68	VSINJM2904D----	IC	NJM2904D		

IC311	89	VSITDA2616-----	IC	TDA2616		
IC781	84	VSINJM7805FA---	IC	NJM7805FA		
Q301,302,304	82	VSIDTC144ES---P	IC	DTC144ES		
Q303	01	VST2SC1815Y---P	Transistor	2SC1815Y		
Q781	63	VSTBUH315------	Transistor	BUH315		
Q782,783	61	VST2SC2482-----	Transistor	2SC2482		
R301,305	75	VRCPTV6--272J-U	2.7K ohm	1/6W	5%	Carbon Film
R303,307,308	72	VRCPTV6--223J-U	22K ohm	1/6W	5%	Carbon Film
R304,306	34	VRCPTV6--102J-U	1K ohm	1/6W	5%	Carbon Film
R309	41	VRCPTV6--823J-U	82K ohm	1/6W	5%	Carbon Film
R310,311	34	VRCPTV6--102J-U	1K ohm	1/6W	5%	Carbon Film
R312,313	11	VRCPTV6--473J-U	47K ohm	1/6W	5%	Carbon Film
R314,342	13	VRCPTV6--563J-U	56K ohm	1/6W	5%	Carbon Film
R315~317	11	VRCPTV6--473J-U	47K ohm	1/6W	5%	Carbon Film
R318,343,368	30	VRCPTV6--333J-U	33K ohm	1/6W	5%	Carbon Film
R322,327	11	VRCPTV6--392J-U	3.9K ohm	1/6W	5%	Carbon Film
R323,326	03	VRCPTV6--123J-U	12K ohm	1/6W	5%	Carbon Film
R324,325	65	VRCPTV6--822J-U	8.2K ohm	1/6W	5%	Carbon Film
R328,329,333	10	VRCPTV6--103J-U	10K ohm	1/6W	5%	Carbon Film
R330~332	11	VRCPTV6--392J-U	3.9K ohm	1/6W	5%	Carbon Film
R334,335	65	VRCPTV6--822J-U	8.2K ohm	1/6W	5%	Carbon Film
R336,337	11	VRCPTV6--392J-U	3.9K ohm	1/6W	5%	Carbon Film
R338~341	03	VRCPTV6--123J-U	12K ohm	1/6W	5%	Carbon Film
R344,345,347	34	VRCPTV6--102J-U	1K ohm	1/6W	5%	Carbon Film
R346,348	62	VRCPTV6--682J-U	6.8K ohm	1/6W	5%	Carbon Film
R349,353,354	35	VRCPTV6--472J-U	4.7K ohm	1/6W	5%	Carbon Film
R350,355	11	VRCPTV6--392J-U	3.9K ohm	1/6W	5%	Carbon Film
R351,352,356	65	VRCPTV6--822J-U	8.2K ohm	1/6W	5%	Carbon Film
R357,358	75	VRCPTV6--272J-U	2.7K ohm	1/6W	5%	Carbon Film
R359,360,363	35	VRCPTV6--472J-U	4.7K ohm	1/6W	5%	Carbon Film
R361,362,364	10	VRCPTV6--103J-U	10K ohm	1/6W	5%	Carbon Film
R365,366	35	VRCPTV6--472J-U	4.7K ohm	1/6W	5%	Carbon Film
R367	65	VRCPTV6--822J-U	8.2K ohm	1/6W	5%	Carbon Film
R369	10	VRCPTV6--103J-U	10K ohm	1/6W	5%	Carbon Film
R370	54	VRCPTV4--332J-U	3.3K ohm	1/4W	5%	Carbon Film
R371	78	VRCPTV6--564J-U	560K ohm	1/6W	5%	Carbon Film
R372,373	11	VRCPTV6--392J-U	3.9K ohm	1/6W	5%	Carbon Film
R374,375,379	11	VRCPTV6--473J-U	47K ohm	1/6W	5%	Carbon Film
R376,383	34	VRCPTV6--102J-U	1K ohm	1/6W	5%	Carbon Film
R377,381,385	30	VRCPTV6--333J-U	33K ohm	1/6W	5%	Carbon Film
R378	02	VRCPTV6--154J-U	150K ohm	1/6W	5%	Carbon Film
R380	07	VRCPTV6--222J-U	2.2K ohm	1/6W	5%	Carbon Film
R382,384,390	13	VRCPTV6--563J-U	56K ohm	1/6W	5%	Carbon Film
R386,387	12	VRNMK02--R22J--	.22 ohm	2W	5%	Metal Oxilde Film
R388,389	73	VRCPTV6--182J-U	1.8K ohm	1/6W	5%	Carbon Film
R397,398	75	VRCPTV4--8R2J-U	8.2 ohm	1/4W	5%	Carbon Film
R399,3C8	75	VRCPTV6--272J-U	2.7K ohm	1/6W	5%	Carbon Film
R3A0,3A1	73	VRCPTV6--182J-U	1.8K ohm	1/6W	5%	Carbon Film
R3A2,3A3	03	VRCPTV6--123J-U	12K ohm	1/6W	5%	Carbon Film
R3A4	52	VRCPTV6--394J-U	390K ohm	1/6W	5%	Carbon Film
R781	49	VRNMT02--330J--	33 ohm	2W	5%	Metal Oxilde Film
R782	26	VRNMK02--R47J--	.47 ohm	2W	5%	Metal Oxilde Film
R783	73	VRCPTV4--330J-U	33 ohm	1/4W	5%	Carbon Film
R784	43	VRCPTV2--474J-U	470K ohm	1/2W	5%	Carbon Film
R785	53	VRCPTV4--100J-U	10 ohm	1/4W	5%	Carbon Film

R786	17	VRCPTV4--331J-U	330	ohm	1/4W	5%	Carbon Film
R787	76	VRNMT02--223J--	22K	ohm	2W	5%	Metal Oxilde Film
R788	16	VRNMK01--681J--	680	ohm	1W	5%	Metal Oxilde Film
R790	87	VRNMK01--3R9J--	3.9	ohm	1W	5%	Metal Oxilde Film
T781	37	RCVTP1362-1-U--	Convert Transfomer				
ZD781	34	VSZBZV85C5V1--U	Zener Diode		BZV85C5V1		
ZD782	50	VSZRD3.3EB1---U	Zener Diode		RD3.3EB1		
“A”	62	VCNCP0307-EJST-	Connector				
“A1”SF“	45	VCNCP0303-EJST-	Connector				
“CC”	01	QCNCP1510-1----	Connector With Wire				
“GND1”	50	QCNCP1517-1----	Connector With Wire				
“CC1”	78	QCNCS1532-1----	Connector With Wire				
“D”	02	QCNCP1547-1----	Connector With Wire				
LO	12	QCNWS0092-1037-	Connector With Wire				
MV1,MV2	10	LFIX-0002-1F---	Fix Plate				
	49	PRDAA0025-1P--S	RADIATOR IC311 USE				
	28	PRDAA0128-1P--C	RADIATOR Q787 USE				
	89	PRDAA0143-1P---	RADIATOR IC781 USE				
	39	XBPSD30P10000--	SCREW IC781 USE				
	77	XJASD30P10000--	SCREW Q781*1				
	82	XJJSD30P10000--	SCREW IC311*2				
	71	QFSHC1017-1---P	PIN F301 USE				
	65	QPINR1069-1----	PIN R781,787 USE				

3.CRT BOARD

CRT PWB	40	QPWB51022-1B-2-	CRT BOARD			
C901,903,904	09	VCKFDU1HY103Z-P	.01uF	50V	+80%-20%	High Diel. Ceramic
C902,908,910	20	VCEACU1CG107M-P	100uF	16V	20%	Aluminum Elect.
C905,907,915	20	VCKBDU1HY103K-P	.01uF	50V	10%	High Diel. Ceramic
C906	53	VCEACU1HG106M-P	10uF	50V	20%	Aluminum Elect.
C909,912,914	45	VCKBDU1HY391K-P	390PF	50V	10%	Temp. Comp. Ceramic
C911,913,916	20	VCEACU1CG107M-P	100uF	16V	20%	Aluminum Elect.
C917	13	VCEACU1EG476M-P	47uF	25V	20%	Aluminum Elect.
C921,924~926	20	VCKBDU1HY103K-P	.01uF	50V	10%	High Diel. Ceramic
C922	54	VCKBDF2HY103K-P	.01uF	500V	10%	High Diel. Ceramic
C971	87	VCEACU2EG106M-P	10uF	250V	20%	Aluminum Elect.
C972	84	VCEACU2EG225M-P	2.2uF	250V	20%	Aluminum Elect.
C973	26	VCKBEF3DY103Z--	.01uF	2KV	+80%-20%	High Diel. Ceramic
D901~908	89	VSD1N4148-----U	Diode	1N4148		
D909~911	12	VSD1SS83------U	Diode	1SS83		
D971	74	VSD1N4002-----U	Diode	1N4002		
FB901~903	15	RCORA1021-1---U	Bead cord			
FB904,905	27	RCORA1033-1----	Bead cord			
IC901	12	VSITDA4885-----	IC	TDA4885		
L901	20	VL-PH100K0000-P	Peaking Coil	10uH		
L902,972,974	05	VL-PH390K0000-P	Peaking Coil	39uH		
L971,973,975	13	VL-NH3R3K0000-P	Peaking Coil	3.3uH		
Q901	61	VST2SC2482-----	Transistor	2SC2482		
Q902,904,906	01	VST2SC1815Y---P	Transistor	2SC1815Y		
Q903,905,907	03	VST2SC3955E----	Transistor	2SC3955E		
Q908,972,974	15	VST2SA1480E----	Transistor	2SA1480E		
Q909,971,973	46	VST2SC3790E----	Transistor	2SC3790E		
Q910	87	VST2SA1015Y---P	Transistor	2SA1015Y		
R901~904	10	VRCPTV6--103J-U	10K ohm	1/6W	5%	Carbon Film
R905	58	VRCPTV6--101J-U	100 ohm	1/6W	5%	Carbon Film
R906~908	58	VRCPTV6--101J-U	100 ohm	1/6W	5%	Carbon Film
R909,912	51	VRCPTV6--121J-U	120 ohm	1/6W	5%	Carbon Film
R910,913,915	53	VRCPTV6--680J-U	68 ohm	1/6W	5%	Carbon Film
R911,914,916	34	VRCPTV6--102J-U	1K ohm	1/6W	5%	Carbon Film
R917~919	58	VRCPTV6--101J-U	100 ohm	1/6W	5%	Carbon Film
R920,921	31	VRCPTV6--221J-U	220 ohm	1/6W	5%	Carbon Film
R922,924	51	VRCPTV6--121J-U	120 ohm	1/6W	5%	Carbon Film
R923,956	26	VRCPTV6--153J-U	15K ohm	1/6W	5%	Carbon Film
R925	30	VRCPTV6--333J-U	33K ohm	1/6W	5%	Carbon Film
R926,933,940	35	VRCPTV6--472J-U	4.7K ohm	1/6W	5%	Carbon Film
R927	53	VRCPTV6--680J-U	68 ohm	1/6W	5%	Carbon Film
R928,935,942	74	VRCPTV6--151J-U	150 ohm	1/6W	5%	Carbon Film
R929	18	VRCPTV6--120J-U	12 ohm	1/6W	5%	Carbon Film
R930,934,939	53	VRCPTV6--680J-U	68 ohm	1/6W	5%	Carbon Film
R931,937,944	53	VRCPTV4--184J-U	180K ohm	1/4W	5%	Carbon Film
R932,938,945	58	VRCPTV6--512J-U	5.1K ohm	1/6W	5%	Carbon Film
R936	45	VRCPTV6--330J-U	33 ohm	1/6W	5%	Carbon Film
R941,946	53	VRCPTV6--680J-U	68 ohm	1/6W	5%	Carbon Film
R943	02	VRCPTV6--390J-U	39 ohm	1/6W	5%	Carbon Film
R947,948	54	VRCPTV4--470J-U	47 ohm	1/4W	5%	Carbon Film
R949,976,984	53	VRCPTV4--100J-U	10 ohm	1/4W	5%	Carbon Film
R950~952	31	VRNMK02--153J--	15K ohm	2W	5%	Metal Oxilde Film

R953,954,957	10	VRCPTV6--103J-U	10K	ohm	1/6W	5%	Carbon Film
R955	30	VRCPTV6--333J-U	33K	ohm	1/6W	5%	Carbon Film
R961~963	31	VRCPTV6--221J-U	220	ohm	1/6W	5%	Carbon Film
R971,980,988	82	VRCPTV2--470J-U	47	ohm	1/6W	5%	Carbon Film
R972,979,987	62	VRCPTV6--682J-U	6.8K	ohm	1/6W	5%	Carbon Film
R973~975	31	VRNMK02--153J--	15K	ohm	2W	5%	Metal Oxilde Film
R977,978	54	VRCPTV4--470J-U	47	ohm	1/4W	5%	Carbon Film
R981~983	31	VRNMK02--153J--	15K	ohm	2W	5%	Metal Oxilde Film
R985,986	54	VRCPTV4--470J-U	47	ohm	1/4W	5%	Carbon Film
R989	62	VRCPTV4--102J-U	1K	ohm	1/6W	5%	Carbon Film
R990	24	VRCPTV6--225J-U	2.2M	ohm	1/6W	5%	Carbon Film
R991	69	VRCPTV2--563J-U	56K	ohm	1/2W	5%	Carbon Film
R993	80	RR-HZ106M-1V4--	10M	ohm	1/4W	20%	H.V. Resistance
SG971~974	13	QSPG-1009-1---U	Spark Gap				
SG975	50	QSPG-1010-1---U	Spark Gap				
VR901	41	RVRSVF001-1206-	Variable Resistor			20M	ohm
“CV”	09	VCNCP0046-JJST-	Connector				
“G”	68	VCNCP0102-PJST-	Connector				
“HS”	80	VCNCP0047-JJST-	Connector				
“KH”	44	VCNCP0049-JJST-	Connector				
“PO”	45	VCNCP0044-JJST-	Connector				
	18	QSOCC1334-112-B	CRT SOCKET				
	54	PRDAA0140-1P--C	RADIATOR Q903,905,907 USE				
	39	XBPSD30P10000--	SCREW Q903,905,907 USE				

REPLACEMENT PARTS LIST VER 1.0

4. VM BOARD

VM PWB	13	QPWB11275-1BA2-	VM PWB			
CV1,V13	45	VCEACU1CG476M-P	47uF	16V	20%	Aluminum Elect.
CV6	50	VCPELU1HG822J-P	8200PF	50V	5%	Polyprolyene Film
CV7	71	VCKBDU1HY561K-P	560PF	50V	10%	High Diel. Ceramic
CV8	09	VCKFDU1HY103Z-P	.01uF	50V	20%	High Diel. Ceramic
CV09	79	VCSFDU1HY104Z-P	.01uF	50V	+80%-20%	
CV10,V11	50	VCEACU1HG225M-P	2.2uF	50V	20%	Aluminum Elect.
CV12	44	VCKBDU1HY102K-P	1000PF	50V	10%	High Diel. Ceramic
CV14,V16	79	VCKBDF2HY472K--	4700PF	500V	10%	High Diel. Ceramic
CV15,V17	75	VCDSDU1HL101J-P	100PF	50V	5%	Temp. Comp. Ceramic
CV18,19	15	VCEACU2DG476M-P	47uF	200V	20%	Aluminum Elect.
CV21	31	VCDSDU2HL560J-P	56PF	50V	5%	Temp. Comp. Ceramic
CV22,V23	14	VCEACU2DG106M-P	10uF	200V	20%	Aluminum Elect.
DV1~V4	89	VSD1N4148-----U	Diode	1N4148		
DV5,V6	39	VSD1SS11914TA-U	Diode	1SS11914TA		
DV7,V8	61	VSDRH1S--------	Diode	RH1S		
FBV1,V2	15	RCORA1021-1----	Bead cord			
QV2,V4~V9	01	VST2SC1815Y---P	Transistor	2SC1815Y		
QV10	87	VST2SA1015Y---P	Transistor	2SC1015Y		
QV11	25	VST2SC1837-----	Transistor	2SC1837		
QV12	36	VST2SC4793-----	Transistor	2SC4793		
RV03	61	VRCPTV6--561J-U	560 ohm	1/6W	5%	Carbon Film
RV6,V43	72	VRCPTV6--223J-U	22K ohm	1/6W	5%	Carbon Film
RV10	07	VRCPTV6--222J-U	2.2K ohm	1/6W	5%	Carbon Film
RV11	34	VRCPTV6--102J-U	1K ohm	1/6W	5%	Carbon Film
RV12	25	VRCPTV6--471J-U	470 ohm	1/6W	5%	Carbon Film
RV13	86	VRCPTV6--681J-U	680 ohm	1/6W	5%	Carbon Film
RV14,V28,V33	50	VRCPTV6--152J-U	1.5K ohm	1/6W	5%	Carbon Film
RV15	28	VRCPTV6--560J-U	56 ohm	1/6W	5%	Carbon Film
RV16,V17	11	VRCPTV6--392J-U	3.9K ohm	1/6W	5%	Carbon Film
RV18	76	VRCPTV6--393J-U	39K ohm	1/6W	5%	Carbon Film
RV19	13	VRCPTV6--563J-U	56K ohm	1/6W	5%	Carbon Film
RV20	65	VRCPTV6--822J-U	8.2K ohm	1/6W	5%	Carbon Film
RV21,V22,V24	07	VRCPTV6--222J-U	2.2K ohm	1/6W	5%	Carbon Film
RV23	10	VRCPTV6--103J-U	10K ohm	1/6W	5%	Carbon Film
RV25	80	VRMPTV2--100J-U	10 ohm	1/2W	5%	Metel Film
RV26,V27	56	VRCPTV6--820J-U	82 ohm	1/6W	5%	Carbon Film
RV29,V34	27	VRCPTV6--122J-U	1.2K ohm	1/6W	5%	Carbon Film
RV30,V31	38	VRCPTV6--683J-U	68K ohm	1/6W	5%	Carbon Film
RV32	03	VRCPTV6--123J-U	12K ohm	1/6W	5%	Carbon Film
RV35,V36	83	VRMPTV2--560J-U	56 ohm	1/2W	5%	Metel Film
RV37,V38	13	VRMPTV2--2R7J-U	2.7 ohm	1/2W	5%	Metel Film
RV39	83	VRNMK02--331J--	330 ohm	1/2W	5%	Metal Oxilde Film
RV40	16	VRNMK02--392J--	3.9K ohm	2W	5%	Metal Oxilde Film
RV41	30	VRCPTV6--333J-U	33K ohm	1/6W	5%	Carbon Film
RV42	51	VRCPTV6--273J-U	27K ohm	1/6W	5%	Carbon Film
“U”	63	VCNCP0302-EJST-	Connector			
U2	53	QCNWS0302-1266-	Connector With Wire			
U	54	QCNWS0305-1159-	Connector With Wire			
	41	LHLDW0006-1----				
	70	PRDAM0032-1P---	RADIATOR QV11,V12 USE			
	44	XJASD30P08000--	QV11,V12 USE			

5. I/O BOARD

I/O BOARD	77	QPWB51038-1B---	I/O BOARD PWB			
C105,114	20	VCEACU1CG107M-P	100uF	16V	20%	Aluminum Elect.
C106,112,115	53	VCEACU1HG106M-P	10uF	50V	20%	Aluminum Elect.
C117,118,141	53	VCEACU1HG106M-P	10uF	50V	20%	Aluminum Elect.
IC101,104	71	VSI74LS125AN---	IC	74LS125AN		
IC102,105	69	VSIM52055P-----	IC	M52055P		
J101,106,109	35	VRMBNV8--000J-A	0 ohm	1/8W	5%	Metel Film
J119,136,137	35	VRMBNV8--000J-A	0 ohm	1/8W	5%	Metel Film
Q101,103	82	VSIDTC144ES---P	IC	DTC144ES		
R104,107,109	14	VRMBNV8--222J-A	2.2K ohm	1/8W	5%	Metel Film
R105	37	VRCPTV6--562J-U	56K ohm	1/6W	5%	Carbon Film
R106	41	VRMBNV8--102J-A	1K ohm	1/8W	5%	Metel Film
R108,112	44	VRMBNV8--562J-A	5.6K ohm	1/8W	5%	Metel Film
R110,124	14	VRMBNV8--222J-A	2.2K ohm	1/8W	5%	Metel Film
R111,123,125	07	VRCPTV6--222J-U	2.2K ohm	1/6W	5%	Carbon Film
R156	13	VRCPTV4--151J-U	150 ohm	1/4W	5%	Carbon Film
R157,158	27	VRCPTV6--122J-U	1.2K ohm	1/6W	5%	Carbon Film
ZD105,107~109	64	VSZMTZJ5.1B---U	Zener Diode	MTZJ5.1B		
ZD117,119,121	64	VSZMTZJ5.1B---U	Zener Diode	MTZJ5.1B		
MV3,MV4	10	LFIX-0002-1F---	Lix plate			
“MS”	26	VCNCP0309-EJST-	Connector			
“WM1”	68	VCNCP480CRJVEN-	Connector			
“WM2”	67	VCNCP480HRJVEN-	Connector			

6.VIDEO BOARD

AV BOARD	06	QPWB51037-1B---	AV BOARD PWB			
C801	64	VCDCDU1HH220J-P	22PF	50V	±5%	Temp. Comp. Ceramic
C802,803	53	VCEACU1HG106M-P	10uF	50V	±20%	Aluminum Elect.
C804,824	50	VCEACU1HG225M-P	2.2uF	50V	±20%	Aluminum Elect.
C805,811	79	VCSFDU1HY104Z-P	.1uF	50V	+80%-20%	Semiconductor Ceramic
C806,809,810	77	VCEACU1HG105M-P	1uF	50V	±20%	Aluminum Elect.
C807,812,838	78	VCEACU1HG475M-P	4.7uF	50V	±20%	Aluminum Elect.
C808,813,815	20	VCKBDU1HY103K-P	.01uF	50V	±10%	High Diel. Ceramic
C814,818,827	20	VCEACU1CG107M-P	100uF	16V	±20%	Aluminum Elect.
C816	41	VCDCDU1HH180J-P	18PF	50V	±5%	Temp. Comp. Ceramic
C817,847,849	53	VCEACU1HG106M-P	10uF	50V	±20%	Aluminum Elect.
C819,823,826	20	VCKBDU1HY103K-P	.01uF	50V	±10%	High Diel. Ceramic
C820~822,832	79	VCSFDU1HY104Z-P	.1uF	50V	+80%-20%	Semiconductor Ceramic
C825	77	VCEACU1HG105M-P	1uF	50V	±20%	Aluminum Elect.
C828,829,831	20	VCKBDU1HY103K-P	.01uF	50V	±10%	High Diel. Ceramic
C830,833,839	20	VCEACU1CG107M-P	100uF	16V	±20%	Aluminum Elect.
C834,848	20	VCKBDU1HY103K-P	.01uF	50V	±10%	High Diel. Ceramic
C835~837	79	VCSFDU1HY104Z-P	.1uF	50V	+80%-20%	Semiconductor Ceramic
C840,841	74	VCDCDU1HH181J-P	180PF	50V	±5%	Temp. Comp. Ceramic
C843,844,861	20	VCEACU1CG107M-P	100uF	16V	±20%	Aluminum Elect.
C845,846,850	82	VCEACU1CG227M-P	220uF	16V	±20%	Aluminum Elect.
C851~856,858	53	VCEACU1HG106M-P	10uF	50V	±20%	Aluminum Elect.
C857,862,864	53	VCEACU1HG106M-P	10uF	50V	±20%	Aluminum Elect.
C859	53	VCEACU1HG106M-P	10uF	50V	±20%	Aluminum Elect.
C860	21	VCEACU1CG477M-P	470uF	16V	±20%	Aluminum Elect.
C863	17	VCKBDU1HY222K-P	2200PF	50V	±10%	High Diel. Ceramic
C865	71	VCKBDU1HY561K-P	560PF	50V	±10%	High Diel. Ceramic
D801~806	89	VSD1N4148-----U	Diode	1N4148		
IC801	06	VSITB1227BN----	IC	TB1227BN		
IC802	74	VSI74HC4538N---	IC	74HC4538N		
IC803,808	41	VSIMC14053BCP--	IC	MC14053BCP		
IC804	27	VSIM51321P-----	IC	M51321P		
IC805	18	VSI7809FA----	IC	7809FA		
IC806	84	VSI7805FA----	IC	7805FA		
IC807	11	RMDL-1031-1----	Modulator			
Q801,803,809	01	VST2SC1815Y---P	Transistor	2SC1815Y		
Q804~806,810	87	VST2SA1015Y---P	Transistor	2SA1015Y		
Q807,808	82	VSIDTC144ES---P	Transistor	DTC144ES		
Q811,812	01	VST2SC1815Y---P	Transistor	2SC1815Y		
Q813~816	82	VSIDTC144ES---P	Transistor	DTC144ES		
R801,806,813	72	VRCPTV6--223J-U	22K ohm	1/6W	5%	Carbon Film
R802,861,867	58	VRCPTV6--101J-U	100 ohm	1/6W	5%	Carbon Film
R803,807,809	10	VRCPTV6--103J-U	10K ohm	1/6W	5%	Carbon Film
R804,814	13	VRCPTV6--563J-U	56K ohm	1/6W	5%	Carbon Film
R805,899	03	VRCPTV6--123J-U	12K ohm	1/6W	5%	Carbon Film
R808	65	VRCPTV6--822J-U	8.2K ohm	1/6W	5%	Carbon Film
R810	04	VRCPTV6--244J-U	240K ohm	1/6W	5%	Carbon Film
R811	51	VRCPTV6--273J-U	27K ohm	1/6W	5%	Carbon Film
R812,815	54	VRCPTV6--332J-U	3.3K ohm	1/6W	5%	Carbon Film
R816	26	VRCPTV6--153J-U	15K ohm	1/6W	5%	Carbon Film
R817,839	75	VRCPTV6--104J-U	100K ohm	1/6W	5%	Carbon Film
R818,819	35	VRCPTV6--391J-U	390 ohm	1/6W	5%	Carbon Film

R820,870,872	11	VRCPTV6--473J-U	47K	ohm	1/6W	5%	Carbon Film
R821,835	10	VRCPTV6--103J-U	10K	ohm	1/6W	5%	Carbon Film
R822~827	50	VRCPTV6--152J-U	1.5K	ohm	1/6W	5%	Carbon Film
R828,852	34	VRCPTV6--102J-U	1K	ohm	1/6W	5%	Carbon Film
R829	31	VRCPTV6--221J-U	220	ohm	1/6W	5%	Carbon Film
R831	30	VRCPTV6--333J-U	33K	ohm	1/6W	5%	Carbon Film
R832,833,850	07	VRCPTV6--222J-U	2.2K	ohm	1/6W	5%	Carbon Film
R836,837,840	86	VRCPTV6--681J-U	680	ohm	1/6W	5%	Carbon Film
R838	76	VRCPTV6--393J-U	39K	ohm	1/6W	5%	Carbon Film
R842~844,857	35	VRCPTV6--472J-U	4.7K	ohm	1/6W	5%	Carbon Film
R845	37	QJUM-1039-1540U	Jumper				
R846	71	VRNMK02--270J--	27	ohm	2W	5%	Metel Oxild Film
R848,849,851	62	VRCPTV6--682J-U	6.8K	ohm	1/6W	5%	Carbon Film
R853,854	56	VRCPTV6--820J-U	82	ohm	1/6W	5%	Carbon Film
R858,860,864	72	VRCPTV6--223J-U	22K	ohm	1/6W	5%	Carbon Film
R859,863,865	35	VRCPTV6--472J-U	4.7K	ohm	1/6W	5%	Carbon Film
R862,868,874	10	VRCPTV6—750J-U	75	ohm	1/6W	5%	Carbon Film
R866,876	72	VRCPTV6--223J-U	22K	ohm	1/6W	5%	Carbon Film
R869,871	34	VRCPTV6--102J-U	1K	ohm	1/6W	5%	Carbon Film
R873	58	VRCPTV6--101J-U	100	ohm	1/6W	5%	Carbon Film
R875	74	VRCPTV6--151J-U	150	ohm	1/6W	5%	Carbon Film
R877,884	11	VRCPTV6--473J-U	47K	ohm	1/6W	5%	Carbon Film
R878,879	62	VRCPTV6--682J-U	6.8K	ohm	1/6W	5%	Carbon Film
R880,882	37	VRCPTV6--562J-U	5.6K	ohm	1/6W	5%	Carbon Film
R881	49	VRCPTV6--183J-U	18K	ohm	1/6W	5%	Carbon Film
R883,887	10	VRCPTV6--103J-U	10K	ohm	1/6W	5%	Carbon Film
R885,886,898	35	VRCPTV6--472J-U	4.7K	ohm	1/6W	5%	Carbon Film
R888,889	61	VRCPTV6--561J-U	560	ohm	1/6W	5%	Carbon Film
R891~893	86	VRCPTV6--681J-U	680	ohm	1/6W	5%	Carbon Film
X801	07	RCRSL1156-1----	Crystal		16.2MHz		
ZD801,802	64	VSZMTZJ5.1B---U	Zener Diode		MTZJ5.1B		
AV OUT	82	QJAKP1129-1-3--	Jack				
AV1,2 INPUT	07	QJAKP1087-1----	Jack				
″AO″	09	VCNCP0305-EJST-	Connector				
″DB″	30	VCNCP030A-EJST-	Connector				
″MS″	26	VCNCP0309-EJST-	Connector				
″S1″	76	QSOCD1547-107--	Socket				
″TM″	80	VCNCP0306-EJST-	Connector				
″U2″	63	VCNCP0302-EJST-	Connector				
TM1	53	VCNCS1078SJJST-	Connector				
TA1	56	VCNCS107ESJJST-	Connector				

7. SWITCH BOARD

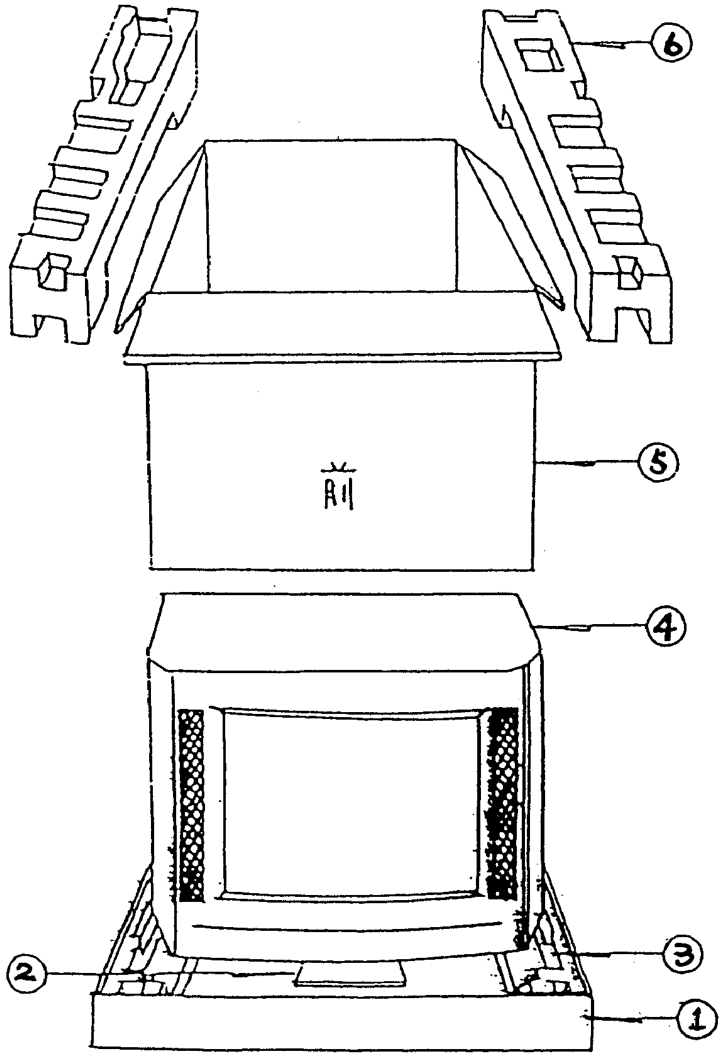
SWITCH BOARD	06	QPWB51033-1B-2-	SWITCH PWB					
J001~007	37	QJUM-1039-1540U	jumper					
LED001	22	VSPHB5-133-----	LED					
LED002	42	VSPHB5-132-----	LED					
LED003	02	VSPHB5-134-----	LED					
RGB182	36	QSOCD1549-115--						
R046	55	VRMPTV6-1201F-U		1.2K	ohm	1/6W	1%	Metel Film
R048	84	VRMPTV6-1501F-U		1.5K	ohm	1/6W	1%	Metel Film
R018,035,068	89	VRCPTV6--821J-U		820	ohm	1/6W	5%	Carbon Film
R052,054,055	78	VRMPTV6-1001F-U		1K	ohm	1/6W	1%	Metel Film
R053	74	VRMPTV6-8200F-U		820	ohm	1/6W	1%	Metel Film
R/C	57	VSILTM9236E----	IC			LTM9236E		
SW001~007	43	QSW-A1199-11-1A	Switch					
“GND”	50	QCNCP1517-1----	Connector With Wire					
LO	08	QCNWS0092-1019-	Connector With Wire					
“B”	44	VCNCP0308-EJST-	Connector					
“FR”	83	VCNCP030C-EJST-	Connector					
	48	LCHSP0014-1F---	CHASSIS					
	21	GHLDP0068-1FD--	HOLDER LED*3					
	58	XEASD30P10000--	CHASSIS*3					
	79	HDECP037-1P---						

8. SYNC ON GREEN BOARD

PWB	07	QPWB51032-1B---	SYNC ON GREEN BOARD				
CS01,S04	85	VCEACU1CG108M-P	1000uF	16V		D20%	Aluminum Elect.
CS02	45	VCKBDU1HY391K-P	390P	50V		D10%	High Diel. Ceramic
CS03	29	VCEACU1HG107M-P	100uF	50V		D20%	Aluminum Elect.
CS05	11	VCEACU0CG108M-P	1000uF	1.6V		D20%	Aluminum Elect.
CS06	28	VCDCDU1HH121J-P	120PF	50V		D5%	Temp. Comp. Ceramic
CS07	41	VCKBDU1HY221K-P	220PF	50V		D10%	High Diel. Ceramic
CS08	50	VCEACU1HG225M-P	2.2uF	50V		D20%	Aluminum Elect.
CS09	45	VCKBDU1HY472K-P	4700P	50V		D10%	High Diel. Ceramic
CS10,S16,S20	77	VCEACU1HG105M-P	1uF	50V		D20%	Aluminum Elect.
CS11,S17	18	VCKBDU1HY181K-P	180P	50V		D10%	High Diel. Ceramic
CS12	23	VCPELU1HG683J-P	.068uF	50V		D5%	Polypropylene Film
CS13	13	VCEACU1HG474M-P	.47uF	50V		D20%	Aluminum Elect.
CS15	53	VCEACU1HG106M-P	10uF	50V		D20%	Aluminum Elect.
CS18	89	VCSRDU1EY104K-P	.01uF	25V		D20%	Semiconductor Ceramic
CS25	30	VCDCDU1HH680J-P	68PF	50V		D5%	Temp. Comp. Ceramic
DS01~S16	89	VSD1N4148-----U	Diode	1N4148			
ICS01	31	VSIM52346SP----	IC	M52346SP			
ICS02	16	VSI74HC86------	IC	74HC86			
QS01,S03~S06	82	VSIDTC144ES---P	IC	DTC144ES			
QS02,S11~S13	01	VST2SC1815Y---P	Transistor	2SC1815Y			
QS15	01	VST2SC1815Y---P	Transistor	2SC1815Y			
RS01	57	VRMPTV2--390J-U	39 ohm	1/2W		5%	Metal Oxilde Film
RS02	63	VRMPTV2--181J-U	180 ohm	1/2W		5%	Metal Oxilde Film
RS03,S22	72	VRCPTV6--223J-U	22K ohm	1/6W		5%	Carbon Film
RS04	18	VRCPTV6--120J-U	12 ohm	1/6W		5%	Carbon Film
RS05,S26	41	VRCPTV6--823J-U	82K ohm	1/6W		5%	Carbon Film
RS06	54	VRCPTV6--332J-U	3.3K ohm	1/6W		5%	Carbon Film
RS07,S08	35	VRCPTV6--472J-U	4.7K ohm	1/6W		5%	Carbon Film
RS09	49	VRCPTV6--183J-U	18K ohm	1/6W		5%	Carbon Film
RS10,S19~S21	34	VRCPTV6--102J-U	1K ohm	1/6W		5%	Carbon Film
RS11	76	VRCPTV6--393J-U	39K ohm	1/6W		5%	Carbon Film
RS12,S14	26	VRCPTV6--153J-U	15K ohm	1/6W		5%	Carbon Film
RS13	27	VRCPTV6--274J-U	270K ohm	1/6W		5%	Carbon Film
RS15,S24	03	VRCPTV6--123J-U	12K ohm	1/6W		5%	Carbon Film
RS16,S23,S25	07	VRCPTV6--222J-U	2.2K ohm	1/6W		5%	Carbon Film
RS17	11	VRCPTV6--473J-U	47K ohm	1/6W		5%	Carbon Film
RS18,S35	75	VRCPTV6--104J-U	100K ohm	1/6W		5%	Carbon Film
RS27	74	VRCPTV6--151J-U	150 ohm	1/6W		5%	Carbon Film
RS30	49	VRCPTV6--183J-U	18K ohm	1/6W		5%	Carbon Film
RS31	11	VRCPTV6--392J-U	3.9K ohm	1/6W		5%	Carbon Film
ZS01	78	VSZMTZ12B-----U	Zener Diode	MTZ12B			
ZS02	64	VSZMTZJ5.1B---U	Zener Diode	MTZJ5.1B			
MV5,MV6	10	LFIX-0002-1F---					
“SN”	29	VCNCP4808RJVEN-	Connector				

PACKING OF THE SET

TIME	PAT. NO.	UNIT	REMARKS
1.	SPAKC0623-1R- -A	1	
2.	ACCESSORIES	1	
3.	SPAKA0579-1F- - -	CROP	
4.	CTV SET	1	
5.	SPAKC0623-1R- -A	1	
6.	SPAKA0579-1F- - -	CROP	



PACKING OF THE SET

TIME	PAT. NO.	UNIT	REMARKS
1.	SPAKC0623-1R- -A	1	
2.	JHNDP0020-1- - - -	4